

The National Locksmith®

February 1992



All-Lock Van
Giveaway!



Vehicle Security Issue

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The National Locksmith

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Vehicle Security Issue

On The Cover

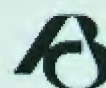
Our February 1992 Vehicle Security Issue features products like the AL-800 by Excalibur of America and the new "Bullet" by Crimestopper Security Products. Also featured is a van to be given away to one lucky locksmith by All-Lock Company. For more product information, see our "Vehicle Security & Home Alarm Systems" product review section beginning on page 26.

*Click on the article
you wish to read*

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Commentary

Random Notes

Last month we spoke about the Americans with Disabilities Act, and how it might impact the locksmith. I may have given a wrong impression in my comments last month. There will be thousands of hardware jobs generated by this law. However, I now believe that it will mostly apply to new construction and renovation work. I am still waiting for the complete package of information from the government. When I receive it, I will share the contents with you.

There is a unique product on the market from Lindustries called the Leveron. This product will allow you to modify a knobset, turning it into an effective leverset. This should find a lot of application as the law begins to take effect.

As you probably know, television stations across the country are always seeking interesting investigative topic to spice up the evening news. This is supposed to help their ratings. Someone got the brilliant idea of setting up a sting operation to try and trap locksmiths into making a bad move.

The sting works like this. The station hides cameras in a parking lot. They then call a locksmith to open a locked car in the lot. Without asking for identification, the locksmith opens the car. Of course, it turns out that the individual doesn't even own that car. The unlucky locksmith then finds his name and face blasted on the evening news show.

You can combat this sting operation by always requiring your customer to identify himself as the owner of a locked vehicle. Record their name, address and driver's license number. Record the make of vehicle, the year, color and license plate number. Require the customer to sign a release form to open the car. In other words, take every precaution to insure that you are opening the car for the owner or his authorized representative.

If you have doubts as to the authenticity of the customer, perhaps you could check with the police. Would they be willing to run a check on the

license plate number for you to verify the registration? What has been your experience with this situation? How do you insure you are opening the car for the owner? Write me a letter and tell me how you handle this situation. Write to: Editor, *The National Locksmith*, 1533 Burgundy Parkway, Streamwood, IL 60107.

In this month's issue, you will find a supplement published in conjunction with the ISC West convention to be held in Las Vegas from February 11th to the 13th. This supplement falls between pages 40 and 41 of your regular issue of *The National Locksmith*. We encourage your attendance at this industry event.

Is the recession lifting? Only time will tell. There is a lot of expectation that we will be coming out of this by spring. When the economy improves, look for it to bring you lots of new business. People have been holding off on a lot of repairs. When folks become more confident, it should set off a buying spree that will help shoot us into better times.



Marc Goldberg
Editor/Publisher

February 1992 5

Letters

Comments, Suggestions and Criticisms

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107. All letters to the editor must be signed.

Readers Comment On True Value Training

Dear Marc:

In response to the True Value situation, I say "Let 'em rip!" If Ico and Locksmith Ledger have taught all they know in six hours to the totally unqualified, I am worried about the over abundance of messes we locksmiths have to clean up.

The teachers, Steve Spiwak to name one, will be responsible for putting True Value stores out of business. Once the old reliable customer tries out their new service, he will spend the next week trying to find a REAL locksmith who will take time to straighten out the mess. Then he will have to pay five times what the original service would have cost, and he won't even cut keys there, let alone purchase hardware.

The fact that the training course is six hours told me everything I needed to know. Six hours? As of now, we will be carefully watching

our buying habits. Greed pure and simple is what this is.

How about it locksmiths. Do you feel like a change?

Donna Pemberton

Tennessee

Editor's Note: I continue to receive many letter like the above, now over one hundred. It is impossible to print all of them, but this letter is representative of almost all of the letters.

Corbin Appreciates Disabilities Act Coverage

Dear Marc:

Just a brief not of thanks for the recent article in *The National Locksmith* on "Corbin-Russwin Uniloc." We appreciate your coverage of the product knowing that many locksmiths and end users will now find it easier to work with this lock.

Some very valid points were raised that readers should heed. The new federal regulations relating to the physically disabled are creating opportunities with the remodeling of existing facilities. *The National Locksmith* readers would do well to realize the implications of the *Americans with Disabilities Act* and what it means to them locally.

Lawrence T. O'Toole

Connecticut

Navy Memorandum Affects Locksmiths

Dear Marc:

Keys, key blanks, and keyways designated "high security" by the Department of Defense are protected against unauthorized possession, use, or reproduction by a recently passed Federal law. The law is similar to that used to protect Postal Service keys against unauthorized use or duplication.

The items designated by the Department of Defense are used to protect high value assets and classified material. Currently, the only items so designated are high security cylinders used in locks and locking systems procured under military specifications, MIL-P-43607, and MIL-P-43951, and other special use locking systems.

The current supplier for the keys, keyblanks, and cylinders used in these particular security systems is Medeco, Inc. Further information may be obtained from Mr. Bobby Leek, Physical Security Equipment Specialist, (202) 433-9143.

Naval Investigative Service
Command Headquarters
Washington, D.C.



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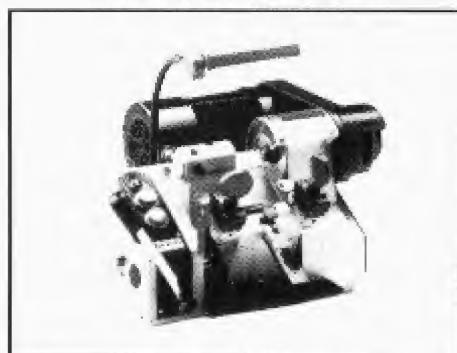
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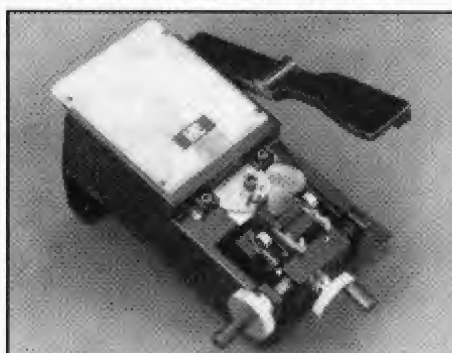
Silca's Bravo USA



First Prize

Locksmith designed, the Silca Bravo USA is a quality semi-automatic duplicator. Four-way jaws hold even the smallest keys as this. One of the most accurate key machines on the market.

HPC's Punch Machine



Second Prize

The Punch Machine™ (1200PCH) is HPC's newest addition to the 1200 series key machines. It works on the same principle as the 1200CM, making it quite versatile. It is also very accurate and completely portable.

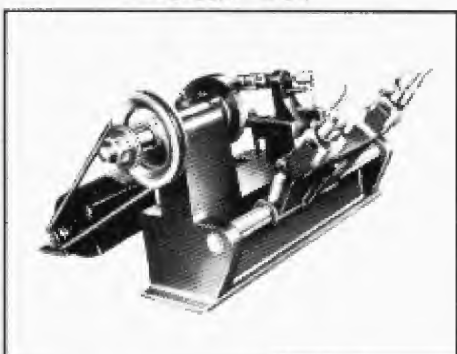
ESP 5000



Third Prize

The model 5000 key machine can be used for manual cutting or, with the flip of a switch, it will cut keys automatically. It is designed to accommodate large head keys such as hotel and foreign auto blanks.

Belsaw 200



Fourth Prize

Duplicate, cut by code, cut flat steel keys. Complete machine with motor, three cutters, guides, and instructions. Built-in micrometer.

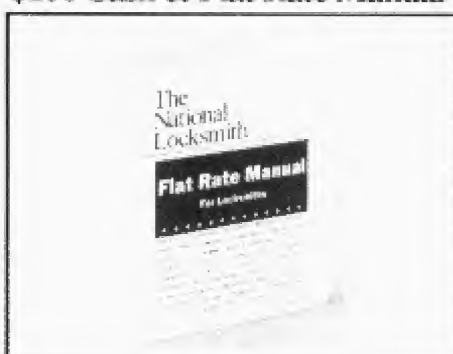
HPC 9120



Fifth Prize

HPC's most compact key cutting machine features reversible jaws. Double-sided copy dog cuts flat steel and safety deposit keys and has softy brush. Excellent versatile machine.

\$100 Cash & Flat Rate Manual

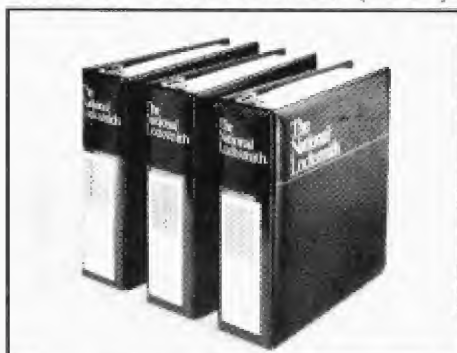


Sixth Prize

\$100.00 in cash will brighten your day! So will the *Flat Rate Manual for Locksmiths*. The manual will help you price your services for profit. You won't ever have to guess how to price again.

Code Books From *The National Locksmith*

General Code Book Set (NGCB)



Seventh Prize

These three books contain 450,000 codes covering domestic lock and automobile codes.

Padlock Code Book Set (NPCB)



Eighth Prize

These three volumes offer 462,000 covering Dudley, American (Junkunc), Master and Yale.

Foreign Code Book Set (NFCB)



Ninth Prize

This two volume set holds 432,000 codes for the complete variety of foreign codes, from Alpha Romeo to Yugo.

Technitips

Helpful Hints from Fellow Locksmiths



Send me your Technitips. Who knows, you may be our next winner! c/o The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

by Robert Sieveking

February's Best Tip

Here are a couple of Technitips that I'm sure you will find useful.

Our shop has had good luck obtaining new business with the following method. In the real estate section of the Sunday newspaper, you will find information on recent real estate sales. Provided in the paper is the name of the party purchasing the property, the address, and the price paid. Send a letter to each of the addresses listed, personalized with the name of the buyer. Tell a bit about your company, then explain the need to rekey locks in order to safeguard against unauthorized entry by real estate persons, or contractors who might still have keys to the property. Offer to conduct a security

inspection.

We send these letters each week, and get business leads from the method. If you are running a special offer, or have a coupon for new customers, include it with the letter. Don't forget to enclose a business card. Many times, the customer will call us months after we have contacted him. This Tip has brought in new business for us.

The next tip is an emergency

method to open Hampton Lock Boxes #LB-100 (used by Realtors in my area.) The lock is a four wheel luggage type lock, making a mathematical progression opening technique rather time consuming. The only tools necessary are a piece of flat-spring stock approx. 1/4" wide, .012" or less thick, and 2" to 4" in length. The other tool is a flat probe such as a broken pick or small screwdriver.

These Prizes Awarded Each Month!

All-Lock A-7000 VATS Decoder
HPC Pistolpick
Silca Rubberhead Keyblanks (100 blanks)
ESP PR-13 Professional Lock Pick Set
Sieveking Products EZ-Pull

Submit your tip and win!

How To Enter

All you need to do to enter is submit a tip, covering any aspect of locksmithing to The National Locksmith. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Why not write it down and submit it to: Robert Sieveking, Technitips' Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

Tips submitted to other industry publications will **not be eligible**! So get busy and send in your tips today. You may win cash merchandise, or even one of many key machines or code book sets! At the end of the year, we choose the winners of the listed prizes.

Last year dozens of people walked off with money and prizes. Wouldn't you like to be one of the prize winners for 1992? Enter today! It's a lot easier than you think!

Every Tip Wins!

Every tip published wins you \$25.00 in Locksmith Bucks! Use this spendable cash toward the purchase of any books or merchandise from *The National Locksmith*. You also receive a bonded Locksmith Bumper Sticker and decal. Plus you are now eligible for the really big prizes!

Best Tip of the Month Prizes!

Best tip of the month wins \$50.00 in cash as well as \$35.00 in Locksmith Bucks! Plus you will receive a Bonded Locksmith Bumper Sticker, decal and a Locksmith Cap.

Plus these prizes will be awarded each month!

All-Lock A-7000 VATS Decoder
HPC Pistol Pick, pick gun
Box of 100 Silca foreign auto rubberhead keys
ESP PR-13 Professional Lock Pick Set
Sieveking Products EZ-Pull

Facing the Hampton Lock Box, insert the spring steel to the left of each wheel (one at a time) with straight inward pressure. Probe the corresponding wheel from one number to the next until the spring steel moves inward about 1/8". You will feel it move in. Record the number and continue until all four wheels have been decoded. This is not the opening combination. To find the opening combination, you must add or subtract five to or from each recorded number. This will give you the correct combination.

Example: Decoded #s 1347
 Add or Subtract 5555
 Correct # 6892

Brad Volpe
 Florida

All-Lock VATS Decoder Winner

While working on a Lexus the other day we found that the automatic key lock that activates and deactivates the electric trunk release had been pushed in. When the lock is pushed in, it takes the master key to unlock the trunk. The customer only had a valet key.

This Technitip is an easy method of releasing the trunk. Remove the under-dash cover, under the steering wheel at your feet. There is a metal cover over the push lock, that clips on. Remove it, and feel around until you find a slot. Slide your finger along the slot until you find the spring action button. Depress the button, and the lock will pop back out. This will activate the switch back to the on position, allowing you to open the trunk with the button.

Juanita Ramsey
 Texas

Silca Keyblanks Winner

This Technitip concerns removing the cylinder from the newer GM glove box lock, which normally requires picking the lock twice.

Normally, removing the plug from these locks requires you to pick the cylinder to the locked position, and then again approximately 15 degrees further to remove the plug with the wafers. It seems that many times it is easy to pick these locks to the locked position, but not so easy to pick it again to remove the plug.

I have found that these locks are easy to read by the depths of the wafers in the keyway. You don't even have to be exactly correct to get a key that will turn the cylinder. Many times you can be a full cut off, in all four wafers and the key will still turn the plug. With this key, you can now remove the cylinder by filing an 1/8" deep cut on the backside of the key in the number two position.

Simply insert your altered key and turn until the cylinder stops. Now push in on the retaining wafer and turn the additional 15 degrees. The plug will pull right out. Now you can verify or correct your cuts and begin progressing to complete the door and trunk key.

Don Rinkor
 California

ESP Pickset Winner

This is a little Technitip that will save you some trouble, next time you're called to open one of those new combination locking gas caps (the ones with the compartment for a spare key.) Occasionally they malfunction, preventing the cap from being removed, even with the correct combination.

You can easily open these caps with a simple tool which you can make from a piece of 1/8" diameter wire. Bend a small hook in one end (5/8" long), then flatten the hook by filing or grinding it to point. If you make the wire 10 to 12 inches long you can make yourself a handle on the other end.

On the underside of the cap are several pockets. Wedge the hook into one of the pockets by pulling up on the wire. Pull up on the wire while turning cap. This will allow you to remove the cap without the chance of damaging your customer's vehicle. Replace the cap with a new one.

I hope that this will help anyone who comes across this problem.

Tim Mason
 California



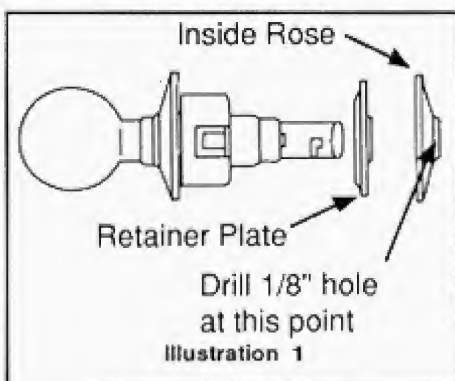
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HPC Pistolpick Winner

Recently, I have run into several entry locks that I had to remove from the inside knob. What has happened is that the installer has screwed the outside rose down too far. The lock is properly installed, but when the inside rose and knob are snapped in place, you can't see or reach the inside knob retainer poke hole. I have been drilling an 1/8" hole through the inside rose about 3/16" from the edge, as you see in illustration one. This will allow access to the retainer.

The retainer will be at the 9 or 3 o'clock, depending on the hand of the door, and the rose can usually be detached enough to rotate the hole to the proper location if you drill the wrong side. The hole can even be drilled at the bottom position (6 o'clock), and then rotated to the retainer location and later snapped on with the hole hidden at the bottom. the outside rose should be screwed out enough to leave the



Inside poke hole visible when you reinstall the lock.

This method, drilling, is only used when it is impossible to lift the inside rose or slip under it and depress the retainer with an ice pick.

Larry Wright
South Carolina

Sieveking E-Z Pull Winner

My Technitip concerns cutting Best/Falcon type keys on the Belsaw model 200 key machine. Recently I was asked to duplicate a number of Best and Falcon keys, but I didn't have an adaptor to cut them on my machine. After some consideration, I found that by positioning the key in the key clamp and placing a flat object, such as a screwdriver tip or the flat handle or a pick, under the key against the side of the vise casting the tip could be easily aligned with the side of the slide casting. Remove the pick or gauge after you have carefully positioned

the key and tightened the clamp. (See illustration 2.)

I tried this method on two different slide castings, and it worked both times. I do enough work on these keys now so I may get an adaptor, but until then, this method is fast and works well. This Technitip should work on other machines as long as both sides of the casting are true, and the same distance apart as the cutting wheel is to the tracer point. I hope this Tip helps another new locksmiths, when he faces a similar challenge.

Richard Notley
Washington

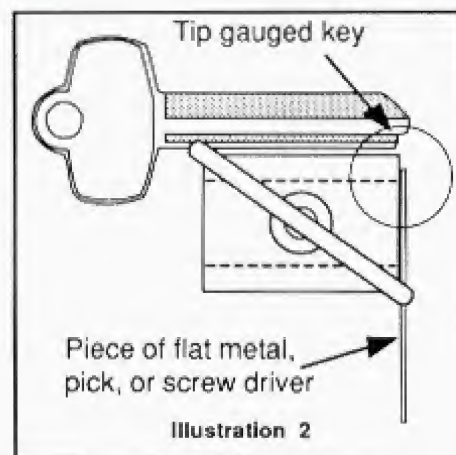


Illustration 2

NATIONAL AUTO LOCK SERVICE, INC.

National Auto Lock Service, Inc. offers a wide range of equipment and services for the Automotive Locksmith. From tools and hard to find key blanks to transponder programming, we can take the mystery out of car service. We accept credit card orders, and can ship COD. Contact us for the latest in automotive technology.

www.laserkey.com

This is a Tip to make your shop a safer place to work. This is a new twist to an old idea. When you step up to your key machine, you put on your safety glasses before your turn on the key machine, "Right?" Sure, you do. What I have constructed does not "fog up" or blur your vision like safety glasses often do.

Behind and above my key machine, I have mounted a wood shelf, with angle iron shelf brackets. (Wood is 10" wide x 9" x 3/4" thick.) To this is fastened a piano hinge, to the piano hinge, a piece of Plexiglass. (Approximately 10" x 19".) You now have a shield that can be folded forward to keep all of those brass shavings out of your eyes. It can also be folded back out of the way when not in use. Made and installed properly it will not interfere with key duplicating or set up in any way. Some size modification may be necessary, depending on your key machine, or its position on the bench, but the principle is the same.

Keith Smith
Pennsylvania

Editor's Note: This Technitip is very much like those Plexiglass "Sneeze Guards" we see over most of the salad bars, in fast food restaurants. If the guard is hinged to be flipped up, out of the way, a "micro-switch"

could be installed under the plastic, to prevent the machine from being turned on with the guard in the "up" position.

On my HPC 1200 code machine there was a small shield mounted to the vise. I discarded this and cut a piece of 1/4" thick Lexan or Plexiglass material, to the dimensions 7-1/2" x 7-1/2", and drilled an 11/32" hole as you see in illustration three. The hole is positioned to match the spacing of the right-left pin used for angle cutting high security keys. To install the eye shield, slip the hole in

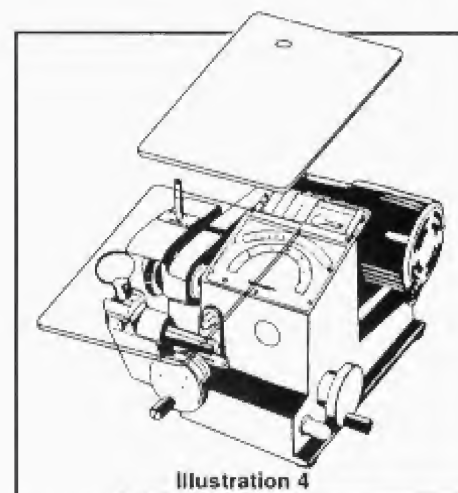
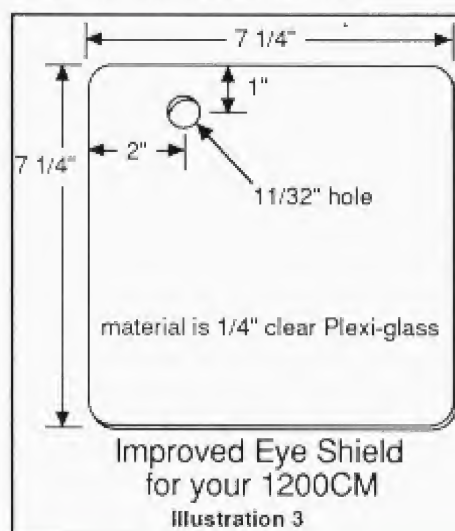


Illustration 4

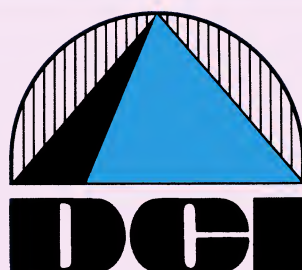
the shield over the left-right pin as you see in illustration four. This covers the cutter arm and swivels to give unobstructed access to the key vise.

Bud Slimick
California

Editor's Note: I suggest that as a rule, before modifying your key machines that you check with the manufacturer to be sure that your modification will not affect your warranty.

Illustration five is a board I constructed for use when I have a large rekeying job in a school or other fairly big building. As I cut the

Continued on page 14



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Continued from page 12

keys in the shop. I hang them on the board in the sequence I'm going to rekey the building, so they're all in order from room to room. I work for a school district with 20 schools and support services, so I also find it handy if I have to leave the job unexpectedly. Being well organized, I can put the board in a closet that has already been keyed, and secure the job until I can return. When I return, I know exactly where I left off.

I also made some of these boards for the schools. When they collect keys from the teachers before the summer vacation, they can keep them in perfect order, by name or room. The whole board can be kept in the school safe/vault. The board can even be sized, to fit in a locking file cabinet, but the idea is the same.

The board is 17" x 21", and was made of 3/4" birch veneer plywood. Natural stain and vinyl edging were added to complete the good looks. Rubber feet give it a non slip/non scratch footing. The key hooks can be screw hooks or simple finish nails. A carry handle is cut at the top of the board (1" x 4") to make the unit easy to carry.

Stan Finn
Oregon

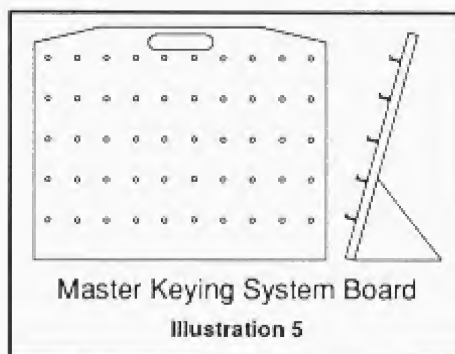


Illustration 5

I have had to service a number of Russwin heavy duty locksets (i.e. Stile Maker and Stile Pacer) where the complaint was that the correct key was used, the cylinder turned, but the lock would not lock or unlock. Upon disassembly, I found that the cylinder cam, which enters a plastic housing for the locking bar, is not causing it to extend or retract. There is an actuator pin that causes the locking cam to operate when the key is turned, as in illustration six. With wear and tear, it loosens and will on occasion fall out of the end of the plug. This leaves the cam free. It cannot be operated by the action of the lock cylinder, and will not lock or unlock the lockset. My solution of this problem is to replace the pin with a "roll pin" that, because

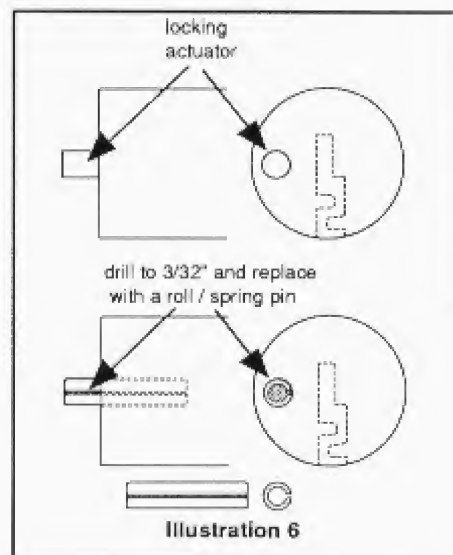


Illustration 6

of its spring tension, will not loosen in the hold and fall out. The hole in the cylinder plug must be enlarged to 3/32" to accommodate the new style pin, but after replacing the pin in this manner, I have had not call-backs because of the actuator pin falling out.

This method will work equally well on cam locks, desk locks and "T" and "L" handle type locks, where the cast actuator pin, on the lock plug, has been sheared off because of misuse or wear.

Larry Kanzer
Pennsylvania



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Newsmakers

New Products and Industry News

Power Access Opens Doors For Handicapped

The Power Access Automatic Door Opener has a low maintenance opener arm, is reasonably priced, and offers an automatic door solution for businesses and other organizations complying with the Americans With Disabilities Act.



The Power Access model contains an opener arm within the box itself; the arm only pushes out to open the door when the automatic control is activated. Thus, people who do not use the automatic feature don't wear out the opener arm.

For FREE Information
Circle 426 on Rapid Reply

Gil Ray's Code Cutters Sharpening Service

Gil Ray Tools Inc. has recently developed a new sharpening method for dull code machine cutter wheels. This method will help the locksmith to continue using the same cutters after sharpening, before replacement with new cutters is necessary. The money saved can be quite substantial.

Cutters for the HPC 1200 CM and the Framon code machines are sharpened in matched sets. The diameter of each cutter is precision



ground and matched within one thousandth of an inch to the diameter of each other cutter in the matched set. Each cutter is then marked with a set number, which helps the locksmith to keep track of them while in use.

Gil-Ray also sharpens flat slotters, both high speed and solid carbide, and also all styles of duplicating cutters.

For FREE Information
Circle 427 on Rapid Reply

Auth/Florence Adds Residential Mailboxes

The Auth/Florence Company announces the addition of residential security mailboxes and commercial drop boxes to their complete line of hardware products. The residential boxes are constructed of heavy duty steel and are fully approved by the United States Postal Service.



The models 1011 and 1012 are ideal for any residence needing additional security or increased capacity. The drop box models 1013 and 1014 provide a large, safe receptacle for video drop-off, book depositories, and payment collection centers.

With the growing need for after-hours collection centers, Auth/Florence products offer a secure solution.

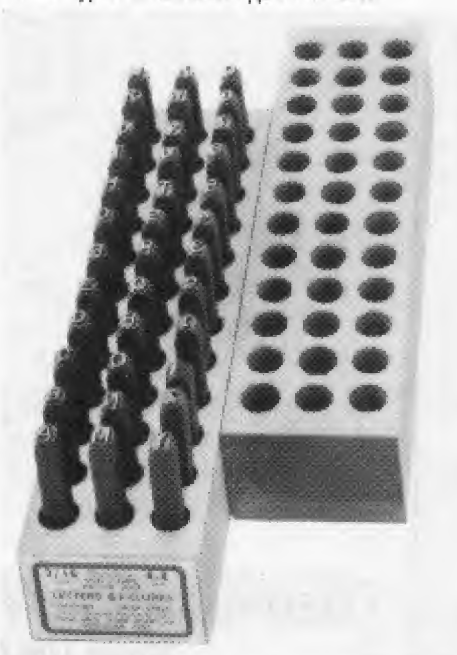
For FREE Information
Circle 428 on Rapid Reply

Young Bros. Stamp Combination Set

Young Bros. has a 36-piece combination letter and figure set at a low price.

The Gruv-Grip combo holds a complete set of machine-made letters (A-Z plus period) and figures (0-9) of one size in a sturdy wooden box with lid. The Young Bros. combination set means sharp, clean impressions for your customers and better profit margins for you. And the combination set is less expensive than buying individual letter and figure sets.

Young Bros. also stocks brass stencils, steel type and steel type holders.



For FREE Information
Circle 429 on Rapid Reply

The Essex KE-260 System

Essex Electronics Inc. introduces their new KE-260 system in their Keyless Entry® product line. The KE-260 system is a coded access system for controlling electronic locking devices.

The KE-260 features an on-board SPDT, dry contact relay that has a 1-60 second adjustable output. The output can also be latched unsecured for applications that require the locking device to be unsecured during particular hours. The KE-260 also features an anti-tailgating function for use with latch monitor strikes.

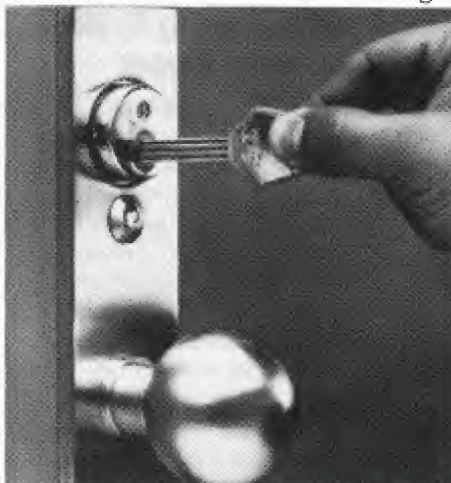


**For FREE Information
Circle 430 on Rapid Reply**

Marlok Company's Solitaire EZ-1

Marlok Company has introduced the lowest priced member yet of its Solitaire line of stand-alone access control products. EZ-1 is an inexpensive stand-alone, programmable lock which can be easily rekeyed in seconds by simply inserting a "learn" key. When a learn key is inserted into the lock, all existing keys are invalidated and all keys inserted within 15 seconds after the learn key will become valid (the 15 second timer restarts after each key).

Solitaire EZ-1's flexible design



makes it ideal for many commercial security applications where frequent re-keying is necessary, such as employee or tenant turnover. The system can accept up to 50 users, will fit into many existing locksets and can be installed in less than 20 minutes.

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Revenue Potential From Security Systems Mgmt.

The nation's oldest Security Systems School is offering its Burglar and Fire Alarm course to locksmiths. This course has the potential to be a major revenue source for qualified locksmiths. Locksmiths can offer both security services and locksmithing individually or as a package. The course covers all basic burglar and fire alarm systems for homes and businesses.

Locksmiths can quickly master the specialized skills of the high profit security business with the help of this course.

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Customline, Inc.'s Swing Gate Operators

Customline, Inc.'s model M-1 and M-2 swing gate operators have been manufactured since 1905. The same quality materials and procedures used then are used now. These openers are designed to give you maximum use with minimum service and they carry a four year parts warranty to back you up.

These units are capable of accepting most access control devices, and custom controls are available to meet your needs.



For FREE Information
Circle 433 on Rapid Reply

MDS Inc. Re-Enters Locksmith Market

Medical Diagnostic Services, Inc. has announced the is re-entering the locksmith market. According to their president, Paul Butler, an expanded line of inexpensive diagnostic products will be introduced to the locksmith/safeman during the first quarter of 1992.

You may now order these products direct by calling or requesting a free catalog.

For FREE Information
Circle 434 on Rapid Reply

Vigilante Locking System For Roll Down Doors

The new Vigilante Roll Down Door Locking System considerable enhances the level of security provided by steel roll down doors. These doors are often used in "mid to high" crime areas to cover retail storefronts, industrial doors and loading docks.

Frequently these areas are isolated, allowing burglars time to pry-off the door locks. Vigilante's new locking system prevents this by providing a welded steel guard that surrounds the

lock and an additional, exterior wedge shaped flange that fits tight to the door surface. The underside of the guard has a locking pin that extends through the door and door tracks, securely locking the door in the closed position.

These protective features prevent burglars from both getting underneath the lock itself, or the underside making it very effective.



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Continued on page 20

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Continued from page 18

Alarm Monitoring Services Helps Locksmiths Profit

The president of Alarm Monitoring Services, Inc., Dera DeRoche, contends that locksmiths are in an ideal position to boost their business profits without increasing their overhead by simply adding one highly profitable product line to their inventories. According to DeRoche, a locksmith can double or even triple his income by offering his clients low-voltage electronic alarm systems.

Once the purchaser has bought an alarm system, he often

subscribes to an alarm monitoring service recommended by the locksmith to maximize the value of the new protective equipment. The locksmith, who made a profit on the system sale, then enjoys additional, repeat income in the form of monthly monitoring fees paid to him directly by the subscriber. The monitoring, however, is not the responsibility of the locksmith. The actual monitoring is conducted at a location called a "central station," a facility such as DeRoche's AMS.

Unlike many central stations that monitor individual subscribers as well

as the accounts of their dealer-clients, AMS caters solely to installers and does not solicit or accept subscribers directly.

**For FREE Information
Circle 436 on Rapid Reply**

Security Fastener's Tool Kit

Security Fastener Company, manufacturer of the Un-Do-It® one-way screw remover offers the Security Solution™ Tool Kit, specifically intended for today's professional locksmith.

Most sizes of hex-pin, spanner, Phillips-pin, square, torx-pin, and tri-wing tamperproof screws can be removed with the 26 Insert bits included in this one kit. To accommodate these bits is a magnetic-tipped stainless steel screwdriver with a newly designed extra-deep storage handle and one-piece cap.

All components are contained in a compact, rugged plastic carrying case with a unique lid chart displaying pertinent facts about security screws and tools.

**For FREE Information
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Educational Books From The National Locksmith

Books from *The National Locksmith* include *The Best of Dale Libby*, a volume which contains safe and other articles compiled over more than ten years. This allows you to have all this valuable information in one place. The cost is \$25.00.

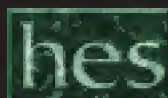
Additionally, our *High Security Safe Opening* book by Dave Mc Omie, priced at \$175.00 contains exact opening details for many of the most difficult imported high security safes such as Tann, ISM and many others. Mc Omie's other books include *Safe Opening Volumes I, II and III*. They are priced at \$95.00 each, \$145.00 for any two volumes or \$175.00 for all three.

Carl Cloud's book, *Drilling Safes*, is a complete guide on how to open locked safes, what tools to use and how to make the hole, plus how to then perform the opening. Price is \$95.00. Bob Sieveking's *Manipulation* book has been lowered to \$49.95; it is a complete home study course on how to open safes without drilling. Plus his *Picking & Impressioning* book is a complete guide on how to quickly open locks, priced at \$45.00.



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Product Review

Crimestopper's Products

"Each system will automatically lock the doors when the ignition is turned on and unlock them when turned off."

Crimestopper Security Products, Inc., is a manufacturer of innovative vehicle security systems. The CS9218MX, CS9218BMX and the CS9228MX include Vector™ Programming, a feature that allows an installer to customize the alarm system to fit each individual customer's needs. The revolutionary concept permits an installer to assign any remote function to any button or combination of buttons on the remote

transmitter. Furthermore, creative installers can change the door locks and auxiliary output clocks as well as functions of certain inputs and outputs.

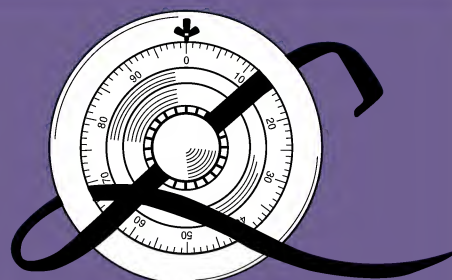
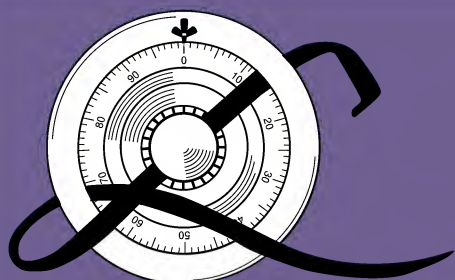
In addition, all three systems include MX coding, which has 18 quintillion digital code possibilities. This assures that each MX transmitter has its own distinct coding with no possibility of duplication.

All three systems come with code learning

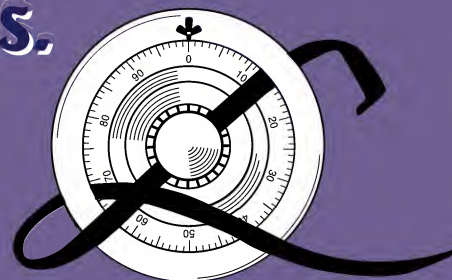
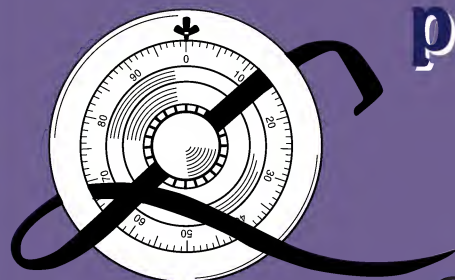
receivers, code erase protection, and power down monitoring protection. Code learning permits easy and quick re-coding of new transmitters and code erase protection assures that the installer can easily erase an old code from the system's memory. Power down monitoring protects the alarm against spikes generated in the vehicle's electrical system and low battery conditions. It also maintains the system's are

and disarm status when the vehicle's battery is disconnected. In addition, a remoteless protection mode permits the user to change a system into a passive operating alarm if he or she loses the remote.

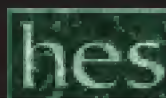
Each system will automatically lock the doors when the ignition is turned on and automatically unlock the doors when the ignition is turned off and the key is removed from the ignition switch. They have an



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The Crimestopper CS9218BMX Vehicle Security System.

output for the addition of a pre-warning device and a closed loop for protection of a pull-out radio, a cellular phone handset, or some other accessory. To minimize false alarms a dual trigger mode is included which requires two sensors to trigger within a certain time frame before the alarm system triggers.

Furthermore, each system will warn the user of an open door when armed and will bypass a troubled zone and arm all other zones if a door, trunk, or hood pin switch malfunctions.

A trunk release feature permits the operator to silently disarm the alarm when releasing the trunk, and an Intrusion Zone

Progression Memory Recall permits the user to ascertain what zone was violated during an intrusion when the systems are disarmed.

The alarm systems come with a 125 dB siren, electromagnetic shock sensor, LED system status indicator, remote panic, and starter disable override switch.

The CS9228MX comes with a 4-button, 15-channel remote transmitter, which can operate alarm systems in up to 15 vehicles, and a two-button, three channel transmitter. It includes Remote Auto Starter, which permits the operator to start the vehicle via the remote, and instant delay panic. There is also a hi-jack protection mode to

guard against theft of the vehicle either at gunpoint or if abandoned with the engine left running. A lights, stereo, and phone-on warning input alerts the user with an audible signal if the lights, stereo, or cellular phone has been left on when arming.

The CS9218MX also has an instant or delay panic and comes with two two-button, three-channel remote transmitters which can control alarm systems in up to three vehicles. A four-button, 15-channel remote is available as an option. This system does not include Hi-jack protection or remote start, but the options can be added by incorporating Crimestopper's CS785MX Remote Auto Starter

module.

The CS9218BMX has the same features as the CS9218MX, but has a delayed panic and comes with two bullet transmitters which can command an alarm system in only one vehicle. This key fob transmitter features a miniature 12-volt battery and a sleek, stylish design. Its MX Coding offers 18 quintillion code variations and a saw filter assures stable frequency control. A four-button, 15 channel transmitter is available for this unit as an option.

For more information contact Crimestopper Security Products, Inc. 1770 South Tapo Street, Simi Valley, CA 93063, (800) 66-ALARM. §



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Locksmith Skills...

by Robert Lazich

Learn To Impression

"Many locksmiths swear by impressing. I have considered insuring my file with Lloyd's of London."

Many articles, books, and even video tapes are available on the art of impressing. They all basically tell us to insert a key blank, wiggle, and file until the lock turns. It sounds so easy that every locksmith should have the technique mastered, but is it as simple as it sounds? Yes and no.

Many locksmiths swear by impressing. Others try it occasionally, while another group disassembles everything in sight searching for that elusive code number or hidden retainer to make a first key. Impressions a lock is like manipulating a safe. Once the safe is open, or the key turns the plug, your job is done without any patching or reassembly.

Before learning or improving present methods, a proper file must be found. The secret of impressing is the right file that will work for you. I've ordered files over the past few years and cannot duplicate the one I use regularly. In fact, I have considered insuring it with Lloyd's of London, because if I lose it I will probably leave the field forever. (See photograph 1.)

How does one know if a file is suitable for impressing? Run the test file across a key blank a couple of times and then examine the results. A top grade round file will leave a mirror-like reflection, not a grainy and dull one. You should not see the file strokes because they will mask impression marks.

The easiest locks to learn impressing on are the ones you will be impressing the most: Ford and Chrysler auto locks. Begin by clamping a car door lock in a vise and prepare the key blank. A couple of strokes with the file will help here. The top of the blank must be a shiny, flat surface.

The selection of a starting flat file is just as important as the round impressing file. Again, you are looking for that mirror-like finish. If the spacing is known, it may be helpful to



1. Flat file, file holder and impressing file.



2. Vise grips with added tooth brazed to jaw.

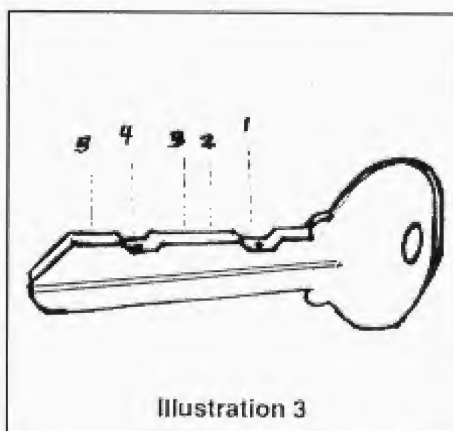


Illustration 3

code cut a little onto each space of the key the key before starting. However care must be taken not to go beyond the manufacturer's one cut since the cuts will have to be dressed with the round file. If code cutting a Chrysler key blank for example, cut a 1/2 cut, not a number one, or else a one cut when dressed up with the round file may be a 1-1/2 or 2 and the key may not work from the start.

Some locksmiths will read the lock first with a penlight or otoscope to give them an idea as to what the cuts are and what the finished key should look like. Knowing where the deep and shallow cuts are in a key is a definite advantage.

The prepared key has to be clamped securely with a suitable tool such as a pair of vise grips before starting. I use a five inch vise grips with a "tooth" brazed toward the rear of the jaws. (See photograph 2.) Any locksmith with a brazing torch can add this feature to their vise grips. A 3/16" bolt is clamped between the two jaws and brazed to the bottom rear jaw. It is then trimmed to the height of 3/16". The key blank's hole, normally used for key rings and chains, is placed over the tooth in the vise grips and then clamped tight. The newly added tooth greatly adds stability when a key is clamped down since the key will no longer flex in the front of the jaws when attempting to get impression marks.

With the blank ready to go, insert the key into the lock and turn with firm pressure. Along with this firm pressure, move the blank up and down to mark the key. Remove the key and take note of any marks that resemble dots. (See illustration 3.) One or two of the cuts may mark. File those down and repeat the procedure. It should also be mentioned that unless a lock is really corroded, no attempt should be made to lubricate it. Lubricants inside a lock will leave a key wet, covering up impression marks. In addition, the lubricant inside the lock will make the lock work better and that is not the aim here; we want the pins to bind in the cylinder and not move freely. If a lubricant, wet or dry (graphite), has been used the key will have to be lightly wiped off before checking for marks.

When examining for impression marks use sufficient light and move the key back and forth to obtain the best

use of light on the key cut. A key held one way will show no marks at all, whereas a slight tip away from you will reveal that elusive impression mark since light is striking the key cut from a different angle.

When impressing wafer locks, be sure the lock can be taken apart in case of wafer failure. An over zealous impressioner can bend a wafer resulting in a major headache. For example, impressing an open Toyota trunk lock is okay since the lock can be removed and repaired, however, Toyota ignition impressing is not recommended since a turn of the key to depress the retainer for removal is required, a bent wafer would be a serious malfunction.

Impressions wafer locks is similar to pin tumblers except the wafer will mark differently. (See illustration 4.) You'll see a line across the key when a wafer is marking. In addition, less tension must be used due to the fragility of the wafers as we already mentioned.

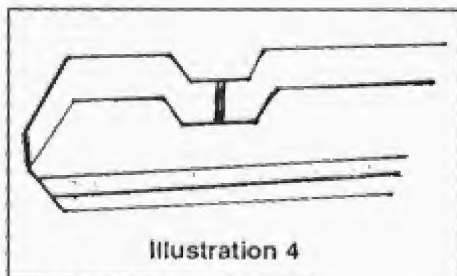


Illustration 4

The construction of the lock itself should be considered since plastic is now appearing more and more, especially on foreign cars. Do not impression locks with plastic. Some metal plugs will split if impressioned, so check and see if the plug is of fragile construction. Early Hurd locks were famous for splitting, found in early Ford products and still in use on Bargman trailer locks today. Some early pin tumbler foreign ignitions were also in this category. Consulting foreign car repair lock manuals before impressing is highly recommended since they will often warn of weak locks or thin wafers susceptible to breakage or bending.

Impression marks are there; look for them on the key. If no obvious marks are found, check to see that you are turning the key in the right direction. If the small dot is not present, file a shadow until the marks appear brighter. The principle of impressing is based upon the idea that one of two pins will bind in the cylinder when turning pressure is applied. These are the first ones to mark.

meet the shear line, the other pins will begin to start marking on the key as it is worked up and down. You can even see many times the plug turning more and more as the key is closer to completion. If the marks disappear after starting, check to be sure a pin is not riding on the very tip of the key. Many locks found on file cabinets and cylinder locks have a fourth or fifth pin that will hide from the unwary impressioner. (See illustration 5.) Check to see if the pins and springs are all functioning properly. The greatest impressioner in the world will never make a key if a pin is stuck in the cylinder.

If a key starts to break and good marks are showing up, duplicate the bent key with a matchbook edge as a spacer under it to duplicate the cuts you made higher. A sliver of a

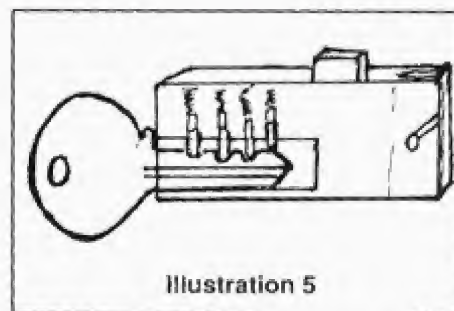


Illustration 5

matchbook cover is a good shim to make a new key, and have enough meat left over to dress the key for final impressing.

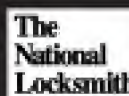
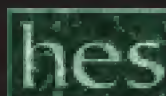
Lock impressing is one method of opening available to the locksmith and one worth trying. Like any aspect of the field it must be practiced and used. The greatest satisfaction will come to you and the customer when you perform "magic" with only a key and file. §

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Black Widow's "Avenger" Security

The entry level Black Widow BW-1000 Avenger is an easy-to-install yet startlingly effective auto security system designed to deter any unauthorized entry.

Economy-priced, the U.S. made Avenger is a self-contained, technically advanced, remote controlled unit with built-in Piezo shock sensor and L.E.D. The Avenger installs with as few as 2 wires (12V hot and ground). And an additional pair of wires in the harness can expand the unit's options to include starter disable, and automatic door locks with optional relay.



For FREE Information
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C&A Control's New Line

C&A Control Systems, Inc. introduces their new product line-up for 1992, including a complete line of convenience and security systems. Their new remote auto starters, convenience and security systems will interface with each other permitting you to "custom make" a system or upgrade to include more features in the future.

New products include: La-Z-Start 325-24, stand alone remote car starter; La-Z-Start 325-MS, interface remote car starter; and Startguard 525-2A, remote starter with security.

For FREE Information
Circle 439 on Rapid Reply

Carbrella's Thunderbar Alarm

Carbrella Motoring Accessories offers the Thunderbar Electronic Alarm and steering lock.

The Thunderbar is a complete, non-install car alarm system that combines a steering wheel lock with sophisticated electronics to protect the automobile.

Unlike traditional steering wheel locks, the Thunderbar also protects accessories inside the vehicle, such as cellular phones, radar detectors and stereos. The device features a 110 decibel siren and krypton strobe light.



For FREE Information
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Carsafe Provides Maximum Security

The Carsafe is an extraordinarily strong locking security box. Its lock is virtually pick-proof and its structure is similarly pry-proof. Carsafe is designed for easy installation in a vehicle.

The Carsafe 5000 Professional Series safe is currently offered in two sizes: 12"x12"x3.5" and 9.5"x11.5"x2.87". The Carsafe 2500 standard series is offered in the small size only. The large safe can accommodate several items simultaneously such as a radio and a portable cellular telephone.



For FREE Information
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Delta Introduces Vehicle Security

Delta Vehicle Security has announced the introduction of three new one piece vehicle security systems. The "Kwickie" series, includes the DA-120, DA-180 and DA-280, all one-piece modular units designed for quick and simple installation.

The basis of all three units is the one-piece design with all circuitry built into the self-contained 125kb siren. Features common to all the units are direct battery hook-up, electronic shock sensor, arm/disarm chirp, panic protection button, intrusion event memory and door entry protection.



For FREE Information
Circle 442 on Rapid Reply

Detec Adds Door Announcer

Detec Security Systems, Inc. has added another member to it's line of door announcers. The "Door Attendant" model (DA3A) is a passive infrared (PIR) door announcer that senses the infrared energy emitted by a person crossing through its field of view and announces their entry with a self contained, pleasing electronic chime tone.

The DA3A has a patent pending design for ultra low battery consumption and does not require any electrical wiring. It also features a side mounted (PIR) and small size (4-7/8" x 1-3/8" x 7/8").



For FREE Information
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Excalibur Alarms Have "Power Maze"

Excalibur offers its new "AL-800LC" line of alarms with a patent pending "Power Maze" feature that has the unique ability to swap the main alarm power wire to the ignition wire location in the event your battery is disconnected. Now with your battery disconnected, when only the ignition is hot wired the alarm will start operating from the ignition wire. When alarm swaps wire locations, the alarm will trigger "on" the instant the ignition wire got its power.



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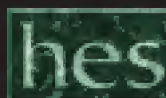
Harrison's Safestop Starter Kill Kit

Harrison Electronic's 988828 Safestop Starter Kill kit as an anti-theft starter disabler which prevents starting the protected vehicle by hot wiring it or by using a stolen or bootlegged key. A dashboard mounted flashing LED signals that the system is armed.

The Safestop Starter Kill features passive arming when the ignition is turned to off. The LED will begin to flash. Disarming is a two-step process using the ignition key and a unique hidden pressure switch. The flat pressure switch facilitates a "stealth" installation.



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Steadfast Introduces Three New Lines

Steadfast Corporation will be introducing three new hardened steel vehicle security product lines in 1992. Additions are to the Pop & Lock line of lift truck security accessories, a Steadfast Ignition Lock Shield for import vehicles, and a Steadfast Ignition Lock Shield for current Chrysler cars and mini vans using the Accustar air bag column.

Pop & Lock tailgate and hood locks are designed to protect the investment of light truck owners who put dollars, personality, and equipment under the hood or cabcap of their vehicles.



For FREE Information
Circle 446 on Rapid Reply

Carbrella Motoring's Barbarian

The Barbarian from Carbrella Motoring Accessories is a steering wheel lock that sits high on the steering wheel to visually deter potential thieves. Made with HTS hardened steel, the device features an internal roller bar making it virtually impossible to cut, says Gary Schlatter.

Barbarian is portable from car to car and can fit any size steering wheel. When attached, the car cannot be driven.

Carbrella will pay you up to \$250 towards your theft deductible if your vehicle is stolen while the Barbarian is properly installed.



For FREE Information
Circle 447 on Rapid Reply

Crimestopper's Samurai Alarm

Crimestopper Security Products has introduced three updated alarm systems dubbed the Samurai Series. The group includes one self-contained alarm system with two one-button, single channel transmitter ((the CS9200); and two versions with a two-button, three channel transmitter (the CS9204 and CS9206).

The CS9200 has a built-in electro-,magnetic shock sensor, a 117 dB siren, and remote panic. It chirps once to confirm arming and twice when disarming.



For FREE Information
Circle 448 on Rapid Reply

Harrison's 9129 Key Lock Alarm

Harrison Electronics new 9129 fender mounted key lock alarm is perfect for commercial truck and van installations.

The 9129 arms using a key and chrome lockswitch designed to resist tampering. Features include arming chirp, panic switch, ignition key safety override, voltage sensing install, automatic reset and 115 dB siren.

An auxiliary output circuit allows accessories: pager, flasher, super siren. Comes with complete installation hardware and window warning decals.



For FREE Information
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Trade Talk...

by Robert Sleveking

Exit Device Repair

"The 'Kung-Fu Kiddies' have been murdering the exit devices at the local school so we were called in."

Though you may find the subject of this article a little specific, I'm sure you will find some concepts here that can be as universal as you want to make them. As a locksmith, I am called on to "repair" a wide variety of mechanical locking devices. Many times, it is much more profitable to make a part, or design a solution that fills the customer's need, than to search for new repair parts. Those that do not have the equipment, knowledge, or experience to meet the customer's needs will be unable to compete on this level. It is for this reason, that we (locksmiths) are able to "rise above" the tow truck drivers and part time "quick-buck" artists, that can only represent themselves as professional locksmiths.

We service a number of schools in our area. Recently, the "Kung-Fu kiddies" have been murdering the emergency exit devices. Von Duprin is a good name in panic hardware, but even the best hardware can't always stand up to the long term abuse of some of these "children." The most common problem has been that the steel actuator pin, as you see in photograph one, becomes broken out of the control or lever arm. I suppose the easy way to repair the exit device would be to order a new part. That is, if you can find a supplier that can deliver one from stock. I called a number of suppliers, and couldn't locate one that could deliver the part in less than six weeks. But, the cost of a new part, in this case, allows plenty of room for profitable repair. For this reason, I was off to the machine shop, to make the part.

The original pin was knurled to act as a drive screw, and had been pressed into the casting. Photograph two shows a new part. The pin is pressed into a raised portion of the lever arm. In the case of those arms which we were called to repair, there was no practical way that the original pins could be replaced or welded



1. Steel actuator pin broken out of the control lever arm.

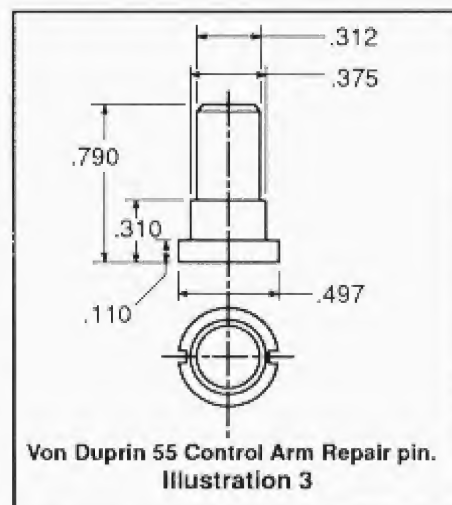


2. New part. Note pin in lever arm.

back to the arms. In order to effect a lasting repair, it was decided to machine new pins. By creating a wide base for the pin and "silver soldering" it into a socket, it was agreed that the repair would be much stronger than the original part.

The pin was turned from a piece of 1/2" oil hardening drill rod. Illustration three gives the dimensions of the new pin. Notice that the diameter of the base is just slightly less than .500." This is the maximum size that the arm could be bored, without creating a weakness. Two notches were sawed into the base of the pin, as you see in the drawing. This is to allow the silver solder to breathe, preventing a bubble from forming under the pin, which might cause premature failure of the repair. Photograph four shows a new pin. The top of the pin is chamfered to match the original part.

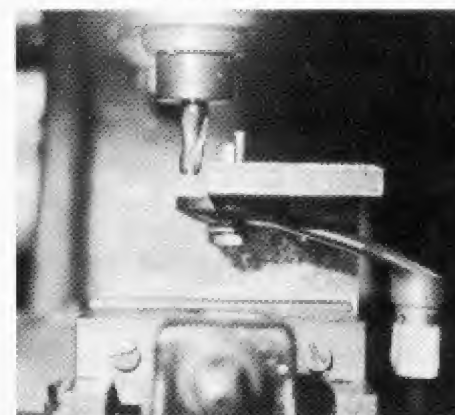
Because of the irregular shape of the part, clamping and accurately locating the position of the counter-



Von Duprin 55 Control Arm Repair pin.
Illustration 3



4. A new pin. Note chamfered top.



5. Positioning the counterbore.

bore, took a little discussion. The easiest method we could find is shown in photograph five. The lever arm is bolted to the underside of a right angle plate, which is held in the milling table vise. This allowed plenty of clearance for left and right handed lever arms. To clamp and locate the part in the fixture, a 3/8" bolt was inserted through the center hole of the

Continued on page 32

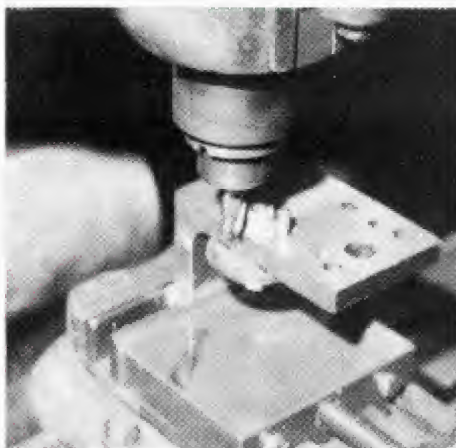
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arm, and a pin (.225"OD) was made to fit through the fixture and dogging screw hole. Photograph six clearly shows this locating pin.

If you intend to repair left and right arms, you will need to drill two positions for the locating pin. The set-up takes a few minutes, but once the machine is set up, you can bore parts one after the next, without much trouble.

The counter-bore is made with a standard four flute end mill. The part is bored to a depth of .115". This will allow the repair pin to sit just below the flat under surface of the lever arm, as it is soldered in place. The wide base of the pin, should sit squarely on the bottom of the counterbore. The hole which was occupied by the original pin is somewhat deeper than the counterbore, which relieves the center of the hole, and allows the four flute end mill to be used. Test fit your pin, to be sure there is a loose fit.

The final step in the repair is to silver braze or silver solder the parts together. You will find that silver brazing steel to brass, and using the cup joint we have made here, will make a nice looking and very strong repair. Use a good grade of "silver solder," from a welding supply house, not from a home center or hardware store. Easy-flo 45% silver was used in the joint shown in



6. Locating pin shown.



7. Easy-flow silver used in this joint.

photograph seven. It's not cheap, but it works best for most applications. Use a good "silver brazing flux," and make sure the surfaces to be joined are clean.

Use a large tip on your gas welding

torch, and a soft flame, so as to create the greatest amount of local heat, in the shortest time. Silver brazing does not require pin-point heat, as you might use for fusion welding. The biggest trick in silver brazing is to keep a close eye on the temperature of the parts being joined. This is fairly easy, if you watch the flux. Coat the base of the pin and the inside of the socket with clean flux, and assemble the pin into the socket. The lever arm should be clamped, level, in a vise, with the pin pointing up. Heat the underside of the arm, at the location of the socket joint, and begin to heat the pin.

Heat both parts evenly. The flux will dry out, as the part heats to 212 degrees Fahrenheit. As the part continues to heat, the flux will become milky in color, and begin to boil and bubble at about 600 degrees. As the part reaches 1100 degrees the flux will settle out and become clear. This last temperature is just short of the brazing temperature. The Easy-flo silver braze material melts at 1120 degrees Fahrenheit, and flows at 1140 degrees. **Do not over-heat parts.** The steel pin will show "dull red," at about 1200 degrees.

Continued on page 72



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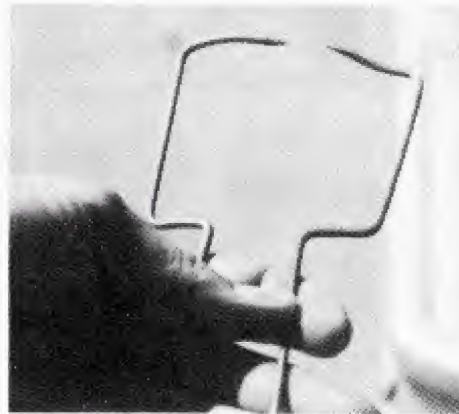
by Shirl Schamp

Opening Wind Wings

"Remember, with the wind wing open, you can reach in and unlock the car. Don't overlook the obvious!"

It has been a long time since anyone has written about opening locked wind wing windows as a method of car opening. Perhaps that is because it seems like such an obvious approach. Maybe it is more fun to get into the more difficult methods of entry. In any case, lots of cars today still do use wind wings and it is worthwhile to go over how to open these windows. Remember, with the wind wing open, you can reach in and unlock the car. Never overlook the obvious!

A variety of wind wing tools are available from your distributors. And through the years I have made some of my own. (See photograph 1.) In



1. Home-made wind wing tool.

fact, there are three distinct types of wind wings out there. Before we go over them, here is how you can

make a set of useful tools.

Take two long, narrow screwdrivers. First, heat the location where you want to make the bend, then bend it to 90 degrees. Let the metal cool to a dull cherry or wheat color. Then finish cooling it in oil in order to retemper the metal. The portion beyond the bend should be one and a half inches long. Also arch the tips. I prefer each tool to arch in the opposite direction.

This allows you to use them from either side of the car and is perfect for many other situations you might encounter. I also prefer the tips be somewhat pointed. You will find

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these tools useful, but you will also want the ones commercially manufactured as well.

You should lubricate any metal tool which will slide over rubber molding. Don't use oil or graphite as they are messy. Use a dry bar of soap for this purpose, or a professional car tool lubricant made for this purpose.

As I said, there are three types of wind wings. In fact, they can not only be found on the front of the car, but also sometimes on rear windows. The first type of wind wing is simply an arm that clamps down over an adjacent post. (See photograph 2.) This particular style is not as popular as it was in the past. There are many shape and size arms that work like this. But you only need to be concerned with how it unlocks, not what the arm looks like. On this type of window, there is no button that needs to be released to open. The arm simply must rotate to free the window.



2. Arm clamp wind wing.

To open this type, insert one of your screwdriver tools, or one that you have purchased from your wholesaler. Place the tip under the portion of the locking arm that extends onto the post. (See photograph 3.) One hand is holding the tool. Place your other hand on the glass near the post, and push gently in on the glass to relieve the pressure on the arm. At this time, rotate the tool, turning the arm and opening the window.



3. Inserting tool to open wind wing.

This works quite well on domestic models. Some of the foreign cars using this wind wing feature a metal strip under the rubber molding along

the bottom of the window. Often you can bypass the metal by inserting your tool into the corner just below the locking arm near the post. Do not use too much force.

The second type of wind wing also uses an arm that clamps down over the post. The second type has a deadlocking button incorporated into it. This wind wing requires you to push the button while rotating the arm to release the deadlock feature.

This pushbutton wind wing is the most popular one out there and it requires the use of two tools. Insert both tools under the glass, right below the locking arm. (See photograph 4.) Place the tip of one



4. Two tools inserted to open wing.

of them against the bottom of the locking arm and the other against the tip of the pushbutton. Pull on the tool resting against the button, pulling it in. Hold the button down while you rotate the other tool under the locking arm. Since you don't have a third hand to place pressure against the window, this will take a hefty rotation. On rare occasion, I have asked a customer to place pressure on the window for me.

This type of wind wing comes in many shapes and sizes also. (See photographs 5 and 6.) In photograph seven, the deadlock release is extending out from the front of the arm. In this case, after you have positioned the tools, you would rotate the two tools in opposite directions at the same time.

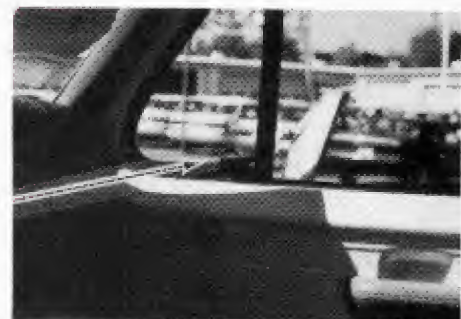
Photograph eight shows the wind wing on a new VW Vanagon, and I have seen the same one on an Audi. (VW make the Audi.) Our two basic screwdriver tools wouldn't work because the deadlock release is placed too high up on the arm, and the tool wouldn't reach. In this case, the special VW wind wing tool would



5. Variations on the...



6. ...pushbutton wind wing



7. Release button extends out from front of arm.



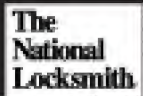
8. VW Vanagon wind wing. A special tool is necessary to open this.

be useful.

Insert one tool under the arm, and the curved VW tool goes on the button as seen in the photo. Depress the release, and at the same time, rotate the other tool in the opposite direction, raising the locking arm.

The third type of wind wing doesn't require any additional tools to open. However, you must use the tools in a different manner than on the other types. In photograph nine

Continued on page 72



by Dale Libby

Dial Communication

"A simple adjustment will allow you to align the wheels with the alignment of the opening index."

When servicing safes, you run into several situations that you can live with. If you have to make concessions when working on a safe, you are asking for trouble. Fix it and make sure that it is right, or you will be back and the customer will not be happy.

The problem discussed here is dial communication with the combination lock. Many safe technicians will overlook this problem and have a set formula to deal with it. What I am talking about is the number dialed (the correct number on the wheel), that will end up in the proper place under the fence. In other words, "gate placement."

If you work on only key change

combination locks, then you will never have this problem. For the sake of this article, we will assume all parts of the safe are properly installed and working correctly, except the true gate placement. We will also talk about "hand change only" locks.

With a key change lock, once the combination is properly set by a safeman (safewoman), (assuming the combination is set correctly), gate placement is perfect. With a key change lock, gate placement is automatic after the combination is changed. This is not true with a hand change lock.

There is a procedure for checking the alignment of the wheels with the

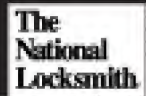
alignment of the opening index. A simple adjustment will take care of this, but I think that many safemen are unaware of it. All you have to do is to move the dial ring in the correct direction the exact amount needed to get a perfectly aligned lock and dial ring.

The best lock to use to learn this simple adjustment is the Mosler 302-402 combination lock. This is because the wheels are on the back cover of the combination lock and are easy to see and read. The locks that I run into with the mis-alignment problem usually have the black plastic hand change wheels along with the spy-guard dial.

The reason that I chose Mosler is

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because it is the lock I see the most work done on to correct this problem by means other than a simple dial ring alignment. The second reason I selected this lock was that there are alignment dots on the back case cover so you can see the alignment of the wheels and see how far off the combination is.

The first way a person may deal with a mis-aligned dial ring is to widen the gates of the wheels to compensate. We have all seen this practice when working on safes. It does make the safe work, but it decreases the lock's resistance to manipulation.

If a gate is normally set on 25, a filed gate will open on 22, 23, 24, 25, 26 and 27, depending on how wide the gate is filed. We know that safe manipulation is not the first line of attack a burglar uses, but it is not proper to lessen the security and manipulative resistance of a safe under normal conditions.

The second way the combination can be set is to be set off the numbers of the true combination to a relative combination. This is done mathematically. This works, as long as the person changing the combination is consistent. When someone new comes along, they

will have trouble setting a specific combination unless they know the rules.

An important practice when changing hand change wheels is to record the existing combination, and then record the actual combination on each wheel. If the combination is 25-50-75, and the wheel pack is 27-52-77, then two numbers must be subtracted from the real combination that you want in order to get it to work. This is chancy, because the combination might only be 1-1/2 numbers off and not a full two numbers.

This is a true story: I went to change a combination and it was a Mosler. The complaint was that the correct combination would not always open the lock, but if you subtracted a little "smunch" to the correct numbers, it would work. I told them I could get it to work exactly. The existing combination was 40-15-80, and right to STOP.

When I took off the back cover of the Mosler 302-402, the hand change wheels were set on 39-14-79, one number under the correct combination. I checked the alignment of the wheels with the back dots, and saw that when the existing combination was dialed the

gates in the wheels all aligned up a little high (right) of the dots. When the relative combination was dialed, the gates all lined up low or left of the dots. Neither combination was exactly correct, but would sometimes work, especially when the combination was dialed a little low.

The real combination of the lock was 39-1/2, 14-1/2, and 79-1/2. With this combination the gates lined up correctly, all three of them. A note at this time, Mosler can use key change covers on their combination locks with hand change wheels. Do not be fooled by the cover. Take it off and check the wheels.

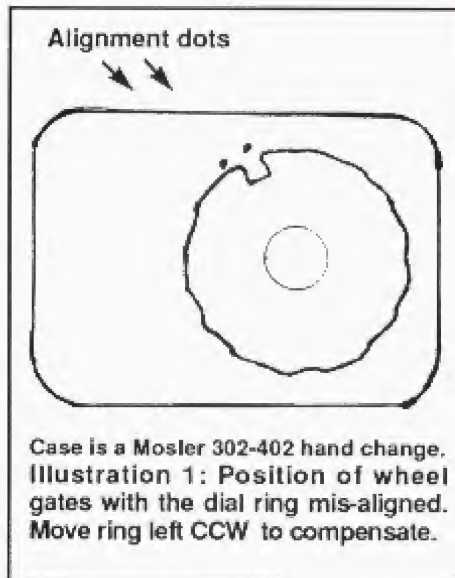
The gate placement was off. This is easy to fix. The first thing that I did was to disassemble the combination lock, clean the wheels, and then set the wheels on the combination that the customer needed, exactly.

I then took off the back cover and saw that the gates were aligned too high or to the right of the marking dots. I then took a small hammer and screwdriver and tap-tap-tapped the dial ring to the left, or counterclockwise. (See illustration 7.) I tapped at the position that the spy-proof dial ring became horizontal. On some dial rings, it is best to tap at the opening index or



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somewhere else where a mark will not be seen.

Remember, if the numbers align the wheels too far to the left, tap the dial ring to the right. The opposite is true for the wheels aligning too low or left. Just move the dial ring in the direction you want the gates to open.

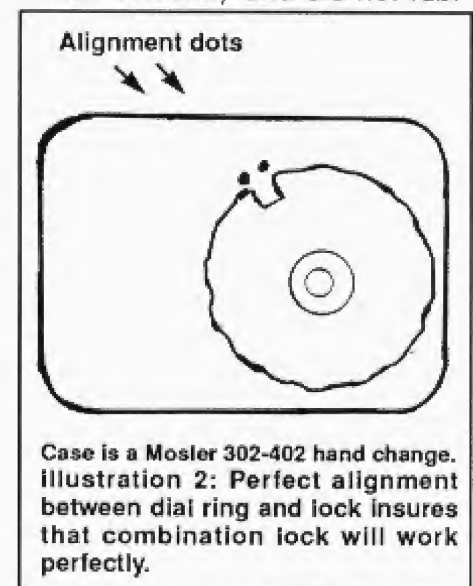
This can also be done mathematically. After changing the combination, record the numbers that work the combination with the tolerance factor built in. Let's work with a one number combination.

We set the one number combination on 45. If 44-1/2 and 45-1/2 work, we are done (assuming a one half number tolerance in each direction). If the combination works on 45 and 46, then we need to align the ring lower (left) so it will work on the half numbers too. It is consistent

with all three wheels. If all three wheels align too high, move the dial left or lower. Reverse it for the opposite problem.

There is enough adjustment to do this with most modern dials, because the screw holes that mount the dial ring to the safe door are elongated. In most cases. We are again assuming that the ring is tight, but there is always room for a little movement and adjustment.

I then replaced the cover and dialed the exact combination again. It worked, the first time. I tried one half number high and one half number low, and it worked again, both times. I checked the dial ring tightness and it was perfect. The dial turned smoothly and did not rub.



(See illustration 2.) I then had the customer try the combination several times, expressing the need to be exactly on the proper combination numbers. It was a novel experience for him.

He did and the lock functioned correctly. Now, when I, or another safeman, comes to change this combination lock, there is no secret code to use or numbers to add and subtract. Just change the combination correctly, and it will work.

Sometimes on older safes when changing a combination, a new dial ring has been used with an old lock, and the splining is different from the original. If the lock is a key change lock, then there are no problems. Again, if it is a hand change lock, then you might have to take readings to determine how far off the real numbers are from the numbers dialed. Proper notes on-site will make this easy. Open and prosper! \$



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by Don O'Shall

Masterkeying Basics

"The keys must have what we consider to be a good pattern of cuts to be part of our system."

What is masterkeying?

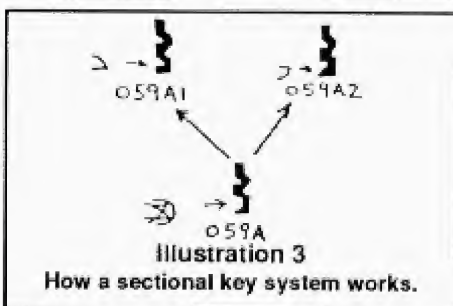
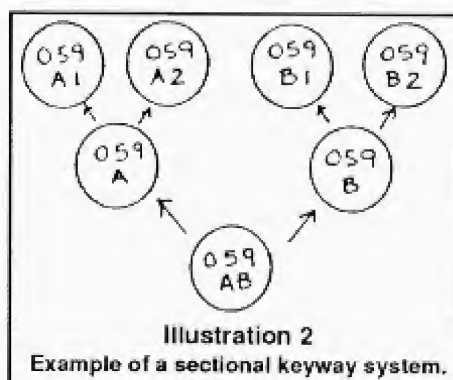
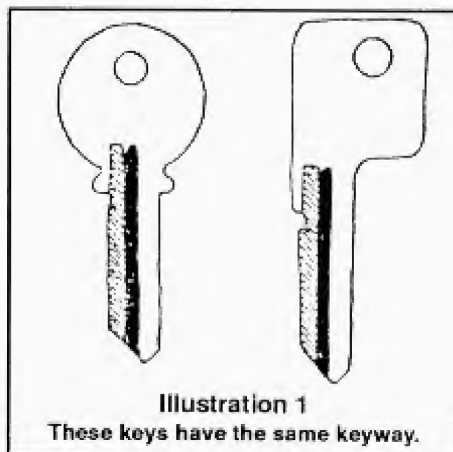
Masterkeying is the development of a keying system that allows each individual door or area to have its own key, (often called a "change key") while also allowing certain keys to operate some or all of the individual locks or areas. Done properly, no individual issued a key in the system should be able to go anywhere they are not intended to go. Keys that operate several areas, each with their own individual key, are referred to as "master keys." Keys that go more places yet are often referred to as "higher level" master keys, and going up the ladder above master keys grand master keys, great-grand master keys, great-great grand master keys, etc.

How is masterkeying possible? In order to masterkey a lock, it is necessary that the keys you wish to use have certain traits in common with each other, and that they differ from each other in certain other ways. Without this, it could not be done, or could not be done without "interchange," which is when a key or keys operate a lock or locks that they were not intended to.

If the keys chosen fit one of the patterns required, the lock is then altered to accept that pattern, usually by the addition of "master pins" (also called master wafers sometimes).

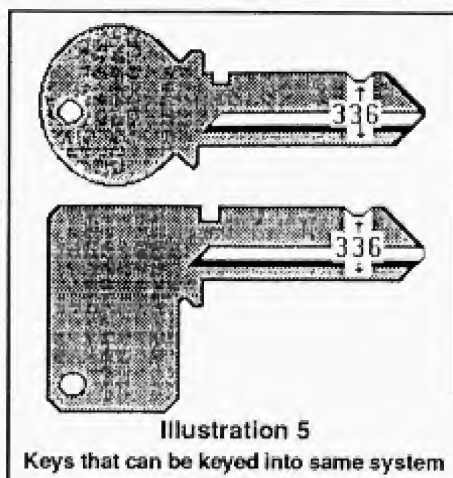
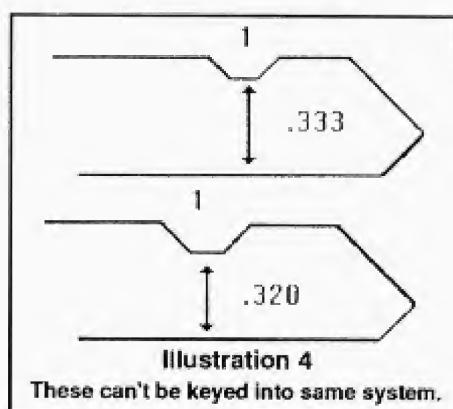
What must the keys in the system have in common? First and foremost, they must have the same keyway pattern, or be a part of the specially designed keyway system (often referred to as a "multiplex keyway" or a "sectional keyway" system). Obviously, a key that can't be put into the lock cannot be used as the master key for that lock. (See illustrations 1, 2 and 3.)

Next, the depths of cut used in the system must all be standardized at the same set. If a number 1 cut on

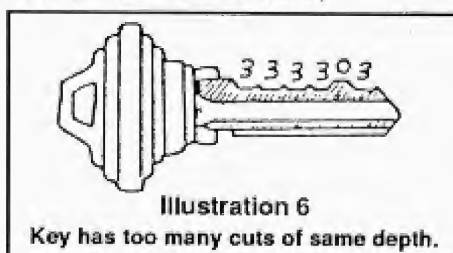


one key leaves .333" (three hundred and thirty-three thousandths of an inch) of metal left on the key, it couldn't easily be keyed into a system with another key that uses its number 1 depth. (See illustrations 4 and 5.)

There must be a similarity in the pattern of cuts chosen. We will look more in depth at what the similarity must be in the next section when we discuss the differences we need.



The keys must have what we consider to be a "good pattern of cuts." A key with all its cuts at the same depth, for example, would usually not be acceptable. A key with some shallow cuts and some deep cuts is good. A key that gets progressively deeper toward the tip of the key (often called a "declining step" or "staircase" key) is not considered a good pattern of cuts. (See illustrations 6, 7 and 8.)



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Illustration 7
This staircase key can be pulled out of the lock cylinder in the wrong position

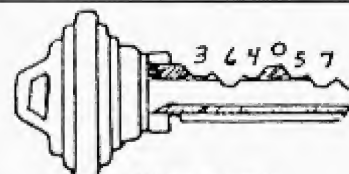


Illustration 8
This key has a good mix of depths on it.

How must the keys be different? If two keys are similar to each other, but differ from each other by only one depth of cut in one position, and if that difference is small, it is possible for them to (with difficulty) operate each other's locks by jiggling the key up and down slightly. Therefore it is important that all the keys in the system be different from each other by a fairly good difference in at least one position, and preferably more than one. For most locks on the market, a two depth difference is enough. (See illustrations 9 and 10.)

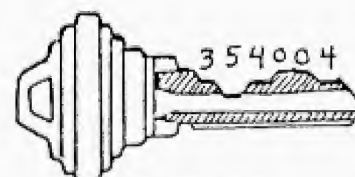
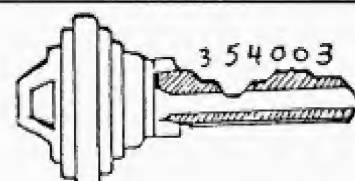


Illustration 9
These keys are too much alike.



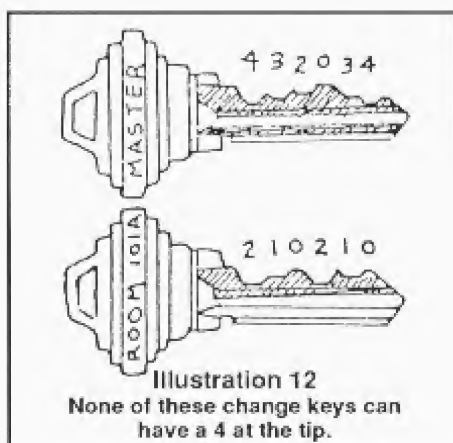
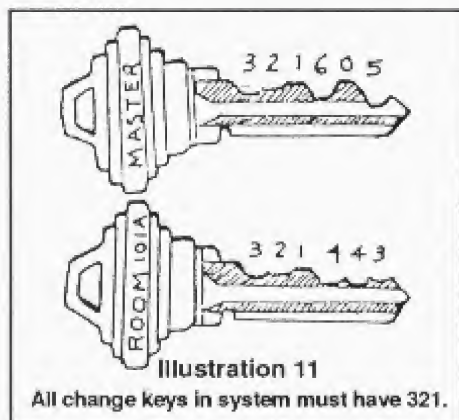
Illustration 10
Keys are similar, but differ enough to use.

Once a key is chosen for the master key, there must be certain differences between it and any of the change keys (regular keys) in the system. For most methods of masterkeying this means that if one

Continued on page 46

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of the change keys in the system uses a particular cut from the master key in a certain position, all of the change keys in the system will use that same cut in that same position. Also, if a change key does not use a master key cut depth in a certain position, none of the change keys in the system will. (See illustrations 11



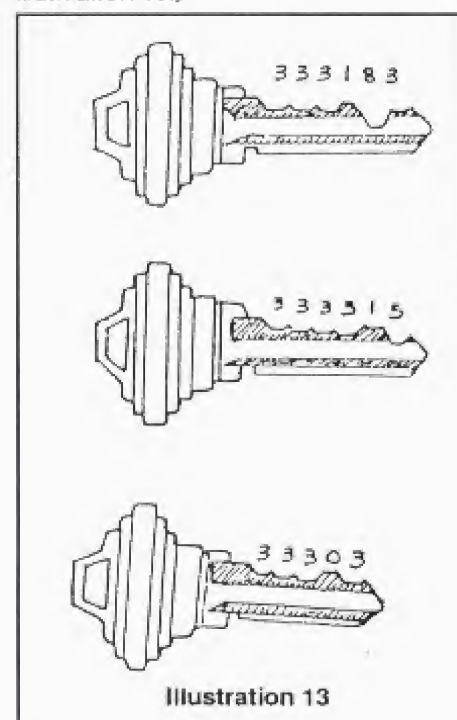
and 12.)

One of our first jobs in masterkeying is to choose a master for our theoretical master key. This is the key we think we are using when we build the system, although we may actually issue (and pin the lock cylinders to) a lower level of master key.

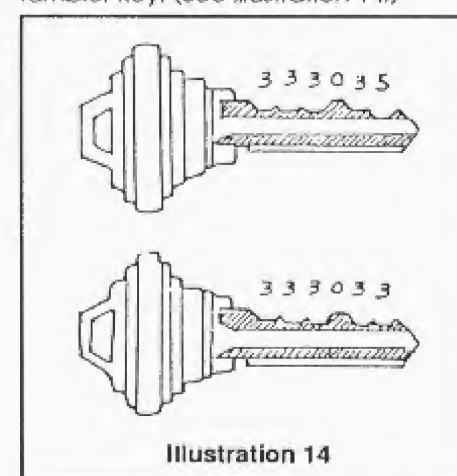
Some customers already have a master key, and want you to pin the locks to it. This is very risky business unless they can provide you with a list of all of the keys already issued. There are ways to do it professionally in many cases, but they are very advanced techniques, and beyond the scope of this article.

There are some basic guidelines that we would prefer to have our master key follow. Theoretically, any key could be chosen to be the master key, but some are far better suited to the purpose, and prevent costly, time-consuming errors and difficulties:

1) No more than three cuts of the same depth should be used next to each other on a key (or anywhere on a five pin tumbler key). (See illustration 13.)



2) No more than four cuts of the same depth anywhere on a six pin tumbler key. (See illustration 14.)



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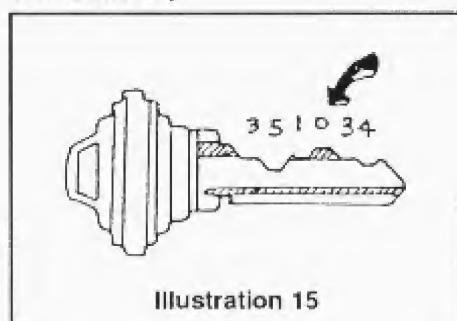
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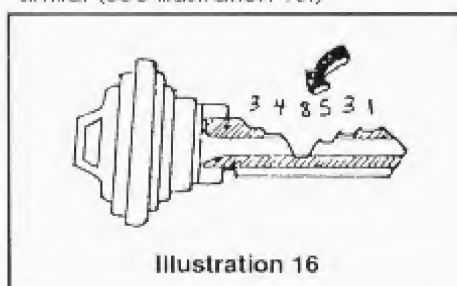
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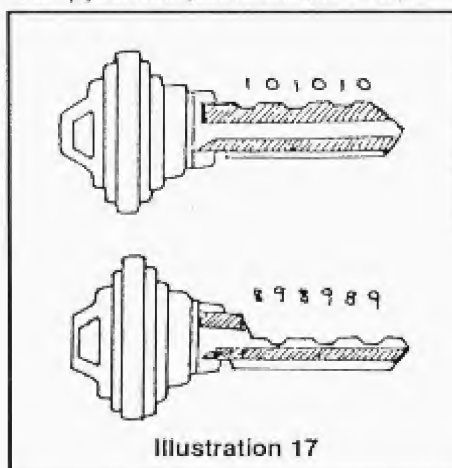
3) At least one of the cuts (though preferably not in the tip position) should be of the shallowest possible depth (most metal left on the key) so that other keys are less likely to be filed down into a master key. (See illustration 15.)



4) It is generally agreed to be a good idea to have at least one very deep cut as well, so that the bottom pins in each cylinder will not be too similar (See illustration 16.)

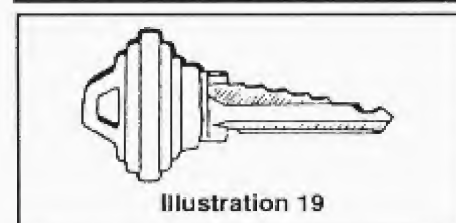
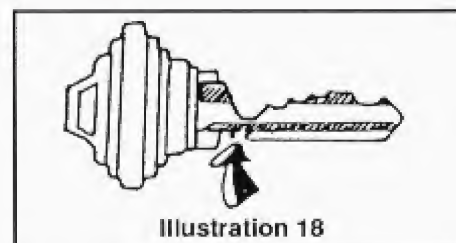


5) It should not have all high or low cuts, because these are too easily picked. (See illustration 17.)



6) The cut nearest the bow of the key should not be extremely deep since it makes the key have a tendency to break off in the lock. (See illustration 18.)

7) A "staircase" or "declining step" key should be avoided since it can frequently be pulled out of the lock cylinder in the wrong position, leaving the lock in an "unlocked" condition, where the plug can be easily turned with a screwdriver or similar tool. (See illustration 19.)



8) The cuts on the key should be within the guidelines for the MACS (Maximum Adjacent Cut Specification) or "Safety Factor" as it is commonly called. This term refers to keys that we can safely assume will work when properly cut and inserted into a properly pinned lock cylinder. It refers to the simple mechanical fact that some keys cannot be properly cut, or if cut, are incapable of operating the cylinder. Most locks on the market today use a spacing increment (center of each cut to center of the next cut)

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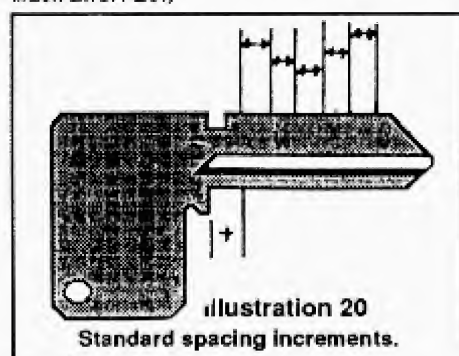


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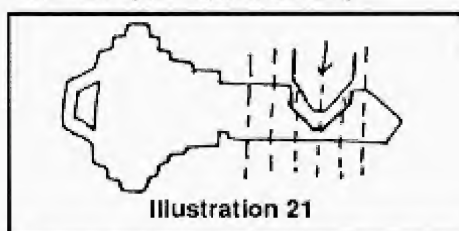
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of .156" approximately. (See illustration 20.)



When a standard code machine cutting wheel has removed approximately .110" of metal from the key, the side of the cutting wheel is just touching the center space of the cut next to it. If we take any metal off from then on, it will take an equal amount from the cut next to it. (See illustration 21.)



For example a Schlage pin tumbler key blank usually has about .337" of metal on it, with the shallowest cut, a zero, leaving .335" of metal in that position. Using a standard .375" full V cutting wheel with a ninety degree slope to the blade, when we remove .110" from the .337" we started out with, the cutting wheel will be at the centerline of the zero cut next to it, but still has .002" deeper to go before it takes any metal off the zero cut. This means that with a zero cut in one position, we can have a cut next to it with only .225" of metal, and it will not affect the operation. On a Schlage lock, the cut depths are in .015" increments, so: 0=.335; 1=.320; 2=.305; 3=.290; 4=.275; 5=.260; 6=.245; 7=.230; 8=.215; 9=.200.

Using the figures just mentioned, we can see that a number seven cut next to the zero leaves .230" on the key, which is more than the .225" we said was our limit, so they key will work. But a number 8 cut leaves only .215" on the key, which means the cutter has taken off .010" (ten thousandths of an inch) from our zero cut, and the key should not work in a healthy lock cylinder.

Since the zero next to seven was okay, we say the safety factor or MACS is seven (7-0=7). Using that

safety factor, we can see that if the cut next to the one we are cutting is a number one depth, the deepest we can go is a number eight depth (1 plus safety factor of 7=8), since a nine cut would exceed the MACS (9-1=8 which is more than seven).

Most of the eight "rules" we just mentioned are guidelines, but numbers 7 and 8 refer to actual mechanical principals, and as such should be considered absolute rules.

Choosing possible key cuts. Once we have selected the theoretical master key, the next step is to determine what key cuts we will use for standard keys in the system (called "change keys"). We want to choose cuts that are similar in pattern to the theoretical master key, but at the same time we want differences that will keep the change keys from acting as master keys and causing "interchange" (when keys operate locks they were not intended to operate).

How we choose these cuts depends a lot on the lock manufacturer involved and the quality and condition of the lock cylinders. The lock manufacturer has standardized his cut depths at a particular set of depths for each product line he manufactures. Most manufacturers use one set for all their standard pin tumbler locks, but there are some that have several sets. You will notice that by far, the majority of the products use ten possible depths, either numbered from zero (shallow) to 9 (deep), or from 1 (shallow) to zero (deep).

However, a handful of popular commercial locks use six depths numbered from 1 (shallow) to 6 (deep). The rest use a set of cuts that includes the 1 to 6, such as 0 to 6, 1 to 7, etc. These locksets are usually intended primarily for residential use, and most require intermediate to advanced masterkeying techniques.

Since the numbering systems using ten depths are by far the most common, we will discuss them first. These use depth increments ranging from .0125" to .020".

Minimum standards of masterkeying say we need at least .023" difference between any key in the system and the next most similar key in the system. In reality, for most lock cylinders .028" is probably a far more realistic minimum difference.

It is easy to see, then, that if our locks use depth increments of .0125" to .020" and we want minimum differences of .023" to .028", a single

increment difference throughout the system. This is great, because it makes calculating the possible depths of cut to use for each position really easy.

With locks using depths of one to zero (deep), starting with the one as an odd number, and two as an even, and continuing through all the numbers, we would get: 1=odd; 2=even; 3=odd; 4=even; 5=odd; 6=even; 7=odd; 8=even; 9=odd; 0=even.

Doing the same with locks using depths of zero (shallow) to 9 (deep), and considering the zero to be an even cut again, we would get: 0=even; 1=odd; 2=even; 3=odd; 4=even; 5=odd; 6=even; 7=odd; 8=even; 9=odd.

Notice that the "even" numbers are all two depths away from each other and so are the "odd" numbers. (See illustration 22.) Therefore, if we use all even numbers for any given position, and use no odd numbers in that position, the cut depth we use there will all be two increments (steps of depth) apart, just as we want.

0
2
4
6
8

Illustration 22
Even cut depths all 2 depths apart.

Similarly, if we use all "odd" numbered depths for another position, and use no "even" numbered depths for that position, we will end up with key cuts in that position that are at least two increments away from each other. (See illustration 23.)

1
3
5
7
9

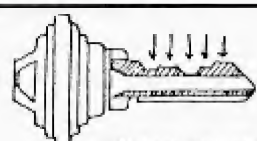
Illustration 23
Odd numbered depths all 2 depths apart.

Looking at the positions where we can put a cut on the key, we will see that there are either five, six or seven positions. (See illustration 24.)

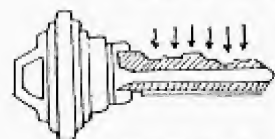
Since six positions is more or less the standard for most commercial locks we may be called on to masterkey, we will use it to show

Continued on page 52

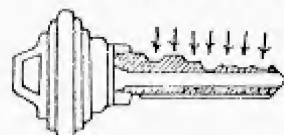
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A "five pin" key has five positions



A "six pin" key has six positions



A "seven pin" key has seven positions.

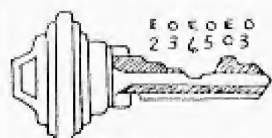
Illustration 24

everything, but obviously, if there is only a five pin key, we just do one less position, and on a seven pin key we just add a position.

Since we have already selected a master key, we will use it to base our pattern of odds and evens on. Look at the key cuts chosen for the theoretical master key, and write an "E" for even positions, and an "O" for odd numbered positions. (See *Illustration 25*.)



Example of determining pattern of odd and even



Another example of determining odd and even cuts

Illustration 25

Now that we have the pattern, the next step is to apply that pattern to the possible cuts for change keys for each position. (Actually, depending on our system, we may not use all of these as you will see, but at this stage it is good to calculate all of them.)

On a chart like the one shown in illustration 26, fill in the theoretical master key cuts and below it write the pattern of odds and even you just calculated. This chart is often called a "base field chart" or a "key biting array (KBA)." Then below each position, write the rest of the cuts that match its pattern. For example, if our master key used a 1 which is odd, you would write the rest of the odd numbers (3, 5, 7 and 9) below it. The order in which you write them does not matter at this

5	4	6	3	0	2
0	E	E	0	E	E
1	0	0	1	2	0
3	2	2	5	4	4
7	6	4	7	6	6
9	8	8	9	8	8

2	3	6	5	0	3
E	O	E	O	E	O
4	5	8	7	2	1
6	7	0	9	4	5
8	9	2	1	6	7
0	1	4	3	8	9

Theoretical Master (TMK)
Pattern of Odd (O) and Even (E)
Base Field Chart (KBA)

Illustration 26

Filling in the Base Field CharL

stage, only that you write only the rest of the odd numbers under an odd position, and the rest of the even numbers under an even position.

This completes the selection of possible change key cuts for a lock which uses ten possible depths. Remember that a zero is considered an even cut.

But what about a numbering system with 1 to 6 possible depths? Obviously, this will affect the way we choose our cuts. But it is actually easier instead of more difficult. Most of the manufacturers using this numbering system use either .023", .028" or .030" depth increments. Since the reason we wanted a two increment minimum difference earlier was because we wanted each key to be at least .023" different from the next most similar key in the system, it is easy to understand that we do not have to use two depths to accomplish this for these locks. The method is easier because of that.

The first step is to write the Theoretical master key cuts on the base field chart. Then skip the line that we would put the pattern of odds and evens in, and go to the section below it. There we can write

1	3	6	3	1	2
2	1	5	4	2	1
4	4	1	5	3	3
3	2	2	6	4	4
5	6	3	1	5	5
6	5	4	2	6	6

Illustration 27

Filling in Base Field Chart for 1-6 depths.

the rest of the possible cut depths in for each position. However, it is a good idea to "scramble" them in each position, so that the system we develop later will be more useful. (See *Illustration 27*.)

Next, unless you need a tremendously large system, (more than 4,000 locks) cross off one of the depths you wrote for each position. A preferred method here is to cross off the deepest cut for the position closest to the head or "bow" of the key) since a deep cut there weakens the key, causing frequent breakage. In the other positions it doesn't matter which one you cross

1	3	6	3	1	2
2	1				
4		1	5	3	3
3	2	2	6	4	4
5	6	3	1	5	5
	5	4	2	6	6

Illustration 28

Crossing off one depth for each position.

off, although some people prefer to cross off the cut one shallower than the master key or one deeper than the master key for each position. (See Illustration 28.)

That completes the selection of possible change key cuts for the 1 to 6 numbering system. A similar method can be employed for some 0 to 6 and 1 to 7 systems, providing that the depth increments are large enough.

For a numbering system like 0 to 8, you can create the base field chart as though the numbering system were 0 to 9, and then, after you write the system, go back and cross off any key having a depth that does not exist, such as the 9 in this example, \$

The Lighter Side

Back To The Future



by Sara Probasco

"Have you read this?" Don asked one morning from behind his newspaper. I could tell his dander was up by the way he

kept snapping the wrinkles from the pages.

"It's ridiculous. Just listen. 'In some states, locksmiths will be prohibited from installing the new electronic locking devices, unless they have an electrician's permit.' Reports like this make you wonder what the future has in store for locksmiths."

"Security equipment seems to grow more and more sophisticated every year, doesn't it? I guess it's necessary to keep ahead of the burglars."

"Maybe so, but I can't help wondering if we will eventually do away with locks and keys altogether, as we know them today."

This wasn't the first time this idea had come up in conversation. Many locksmiths we know have been concerned about exactly where the lines are drawn between electronics, alarms, and locks. In some states, there are strict lines of enforcement separating the various areas.

I couldn't help thinking how simple the future seemed, a couple of decades ago, but now that we were living it...

"What were you thinking about?" Don asked, interrupting my mental wanderings.

"Buck Rogers," I replied.

"You lost me there."

"I was just thinking how we've been exposed to futuristic ideas for decades. Do you remember the characters in the old movie serials who dressed in leotards and passed through diamond-shaped doors that opened and closed like camera shutters?"

"That must have been before my time," Don replied, a silly smile spreading across his face.

Ignoring him, I continued, "You can see the same sort of thing on the *Star Trek* re-runs, and they weren't much different in the movie, *Star Wars*, as I recall, I kind of like the idea. The shape of the opening suits my body style. Besides, I like the way they opened automatically when someone approached, like the doors at the supermarket."

"Aha!" Don leaned forward, his forefinger pointing toward the ceiling as he dropped his forgotten newspaper onto his bowl of soggy corn flakes. "Tell me, have you ever seen any locks securing those doors? Somehow, I have trouble believing that future generations will be any more honest and trustworthy than people today, yet I don't recall ever seeing anyone pull out a key ring to unlock anything. Do you?"

"They don't need key. They have voice-print or hand-print entries. Remember?"

"Oh, great? I can hear it now: 'Hello, A-1 Lock & Key? I need a locksmith to get me into my house. I have a touch of laryngitis and the door won't respond to my voice.' Or, 'I cut my finger yesterday and now the entry terminal won't accept my hand-print. How do I get in?' And we thought we had problems now!" Reaching for his coffee, he noticed

the saturated newspaper before him and lifted it, watching it drip blackened goo onto the table.

Trying to ignore him, I said, "Can you imagine how the industry would change if everyone converted to keyless locks? Just think. Instead of being known as a locksmith, you might become a Thoroughfare Portal Retraction Device technician."

He ignored my attempt at levity. "There's something else that bothers me," he muttered.

"What's that?"

"Remember what happened to Buck Rogers' men whenever they forced open one of those doors? A couple of guys with ray guns were waiting on the other side to blast them to kingdom come. Not a pretty thought for a Monday morning."

"I thought he was before your time."

Don cut his eyes around at me. "I caught a re-run once."

"Uh-huh. Well, look at the bright side," I continued, "The side-line possibilities are endless."

"Oh sure. We could get into the plastic surgery market." His voice took on exaggerated high-pitched qualities of a doting dowerer: "My little Clarence is turning sixteen next week and I promised him a new hand-print of his own for his birthday."

"You wouldn't have to go quite that far. You might just manufacture a glove with hand-imprint qualities, or how about getting into the voice-print recording business? Or devise a new 'Laserlock,' utilizing a special ray-gun entry tool that shoots a patterned beam onto a light sensitive pad by the door."

Off in another world, Don continued to mutter, "Today, we think computer technology affords limitless possibilities, yet even that may be obsolete in another twenty years." He looked up at me, a finge or terror in his eyes. "I've even heard that television, as we know it, is on its way out. Three dimensional images, projected into the center of your viewing room are being predicted. Instead."

"That's all I need: the Green Bay Packers tramping around on my new living room carpet."

"What do you suppose an image like that would do to the motion detector on our security alarm system?" he asked.

"You'd simply have to change your ways."

"Me?"

"After all, I'm not the one who stumbles off to bed and leaves the TV on." I couldn't suppress a small giggle, remembering how voices in the night had awakened us, a few nights before, only to discover the TV still going strong in the den.

"Be serious," Don protested. "This could become a real problem. There are aspects of some of these security measures of the future that are not being realistically addressed."

I glanced at the clock. "Oops! Gotta run. I have an appointment downtown in thirty minutes." As I circled his chair, I gave him a little kiss on the forehead. "You get the details all worked out, and we'll talk about it some more this evening."

I had forgotten all about our morning's conversation by the time we sat down to supper. As I slipped into my chair, Don ceremoniously placed a proposal folder before me. "What's this?" I asked.

"You'll see," he replied, smiling.

Opening it, I read the title page. "Entry-portal Security Mechanism of the Future," it said. On the following page was written in large letters, "No locks or keys required." Page three said, "Secures most doors." I turned to the next page, half expecting to find "Burna Shave," written there. Instead, I read, "Simple to operate, yet keeps out the cleverest intruder." On the last page was a drawing of the "mechanism of the future," an enormous boulder, rolled against the door.

I glanced over at Don, who was smiling smugly. "Had a slow day at the shop, I see," I said, indicating the proposal in my hands.

"Not too busy," he admitted. "I got to thinking about all this futuristic stuff, and it occurred to me, the more things change, the more they remain the same." He pointed to the sketch of the rock. "Do you know, that was one of the first means of securing a doorway. Why wouldn't it work just as well, today, if you were looking for a keyless security device?"

"There's one fairly obvious reason," I said.

"What's that?"

"You'd need a team of mules to open the door."

"Ah, but there's the beauty of it all. All you really need is a little magic. It was all in a book I read as a kid. And isn't that what I tell my customers locksmithing is, anyway?"

"What do you mean?"

"Whenever someone asks, 'How did you get that opened so quickly?' I always tell them, 'It's magic!'"

"Right."

"Well, this is, too. You only need to remember the right words."

"Which are?"

"Open Sesame!" §

Beginner's Corner

Lockset Service



by Eugene Gentry

A locksmith of seven years told me he had not heard of a Weiser shim. If this is so, then maybe some of the beginners do not know about the shim. It was introduced to me by a distributor. This is a shim used along with a key to remove the cylinder from the Weiser lockset. Following is a discussion on how to use the shim.

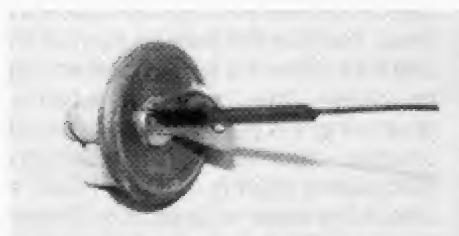
The shim is about five inches long and .010 thick. (Part number 1425.) The shim is pushed into the keyway on the right hand side of the key. On a tight fit you may have to push them in together. (See photograph 1.) The shim has to be pushed in a minimum of 1-9/16" to enable it to disengage the tailpiece from the inner end of the cylinder plug. The inner knob should be in a locked position during the removal and assembly of the knob face.



1. Weiser lockset with key and shim.

Turn the key and shim counterclockwise to about the 11 o'clock position, turning slightly to the right and left, pulling gently on the key. The knob face and cylinder will pull free of the knob shell. (See photograph 2.) To re-key, remove the retaining ring from the rear of the cylinder. (See photograph 3.)

To replace the cylinder, turn the key to the 11 o'clock position, place the top of the cylinder between the cylinder guides in the knob at the top, push in, and turn the key to the proper upright position. The knob face will lock in place.



2. Weiser knob face and cylinder.



3. Note retaining ring at rear of plug.

If you do not have a shim, remove the lockset from the door. Follow the preceding instructions while you are pulling out on the tailpiece.

Tim Scott, of Scott's Lock and Key in Pocatello, Idaho passed this Weiser tip on to me: To remove the cylinder without a shim and without taking the knob off the door, use a rake in the keyway to push back the tailpiece. By turning the inside knob, while in a locked position, and holding it tight it will hold the tailpiece out. You may now put in the key, turn it to the 11 o'clock position and remove the cylinder.

If you have to pick the lock, you may grind a Weiser blank down to the last cut, and use it with the shim to remove the cylinder. Weiser uses key blanks, Star 5WR2, Taylor WR 3 or 54WB, Iico 1054WB.

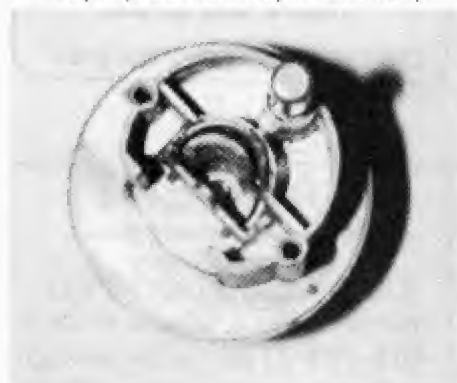
One problem I have had is working on worn locksets on older houses. I would like to replace the worn set with a new lockset but can't find a lockset that will match the others in the house. Sometimes I can get the parts from other older locksets for repair.

One call came for a key change and I found the front door was a Weiser, the gate was a Kwikset, and

the rear door was a Japanese lock, all keyed alike using a Kwikset key. At first I was stumped because I knew the Japanese lock had slightly different spacing than the other two. I used the original key as a pattern for spacing and it worked fine in the locks. With my Foley Belsaw cutter, I adjusted the micrometer to change the depths for the new key, and was able to finish the job.

On service calls you will frequently run into different brands of locksets for rekeying. Here is some information on the Weslock: keyblank used is Star 5 WK 1, Taylor 175 W, and Iico 1175N.

Once this lockset is off the door, it is fairly easy to remove the cylinder. Turn the knob to an open position, and if you look down in the hole at the rear of the lockset, you will see the head of a screw in the center. Remove this screw with a flat thin-bladed screwdriver, and the cylinder will fall out. (See photograph 4.) Be careful if you have a key in the cylinder. There is no retaining ring at the rear of the plug and if the key is turned slightly, the plug and pins will all fall out. Use a follower with notches to remove the plug. Set the knob upside down and the screw will stay in place for easy re-assembly.



4. Insert screwdriver in hole in rear of the lockset.

One word of advice. Be cautious with the locksets from Japan and Taiwan. There are several brands; Moss and Defiant are the ones that I know of. Some are hard to work on because parts are pressed together instead of using threads. You can pry them apart,

Continued on page 75

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Exit Device Repair

Continued from page 32

You may add the silver braze material to the part as you heat the joint. The silver solder will run into the joint, to displace the flux. Keep the flame over the joint, to prevent the metals from oxidizing, but don't "boil" the solder. Use a soft flame. The flame should not "blow" the flux or the solder. Add only enough silver solder to the joint, to fill the socket and breathing holes. Remove the heat as soon as the joint is full. Allow the joint to cool enough to make the pin solid, before quenching the part on water. The 26D brushed chrome finish may become discolored slightly, by the heat, so watch the heat to keep from burning the finish off the arm.

A number of these arms have been repaired, at a considerable savings to the school over replacement with a new part. The cost of the repair is, "all service," which is the locksmith's stock in trade. If you can give good service, at a fair price, you will never lack work. When you do a special job, like this, make sure your customer sees and understands what you have done for him, and how much you have saved him. That's how you build your reputation and keep customers. §

Wind Wings

Continued from page 36



9. A piece from the arm extends into a notched cut-out.

you'll notice the deadlock release mechanism is nestled inside the locking arm, between the arm and the glass. You would squeeze this button as you turn the arm.

If you are working under the glass with the two screwdriver type tools, you push one tool into the button, while rotating the other tool placed under the arm. (See photograph 10.) This rotates



10. Working under the glass.
the arm, opening the window.

Remember the lowly wind wing next

time you are called to a car opening featuring one of these windows. Often, this can be your quickest and easiest approach. §

next page, half expecting to find "Burma Shave," written there. Instead, I read, "Simple to operate, yet keeps out the cleverest intruder." On the last page was a drawing of the "mechanism of the future," an enormous boulder, rolled against the door.

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"Ah, but there's the beauty of it all. All you really need is a little magic. It was all in a book I read as a kid. And isn't that what I tell my customers locksmithing is, anyway?"

"What do you mean?"

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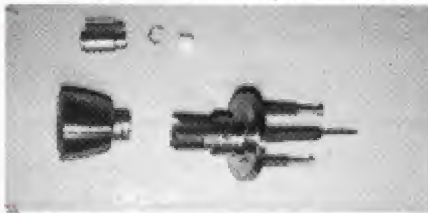
"Open Sesame!" §

Beginner's Corner

Continued from page 71

but sometimes it's impossible to get them back together. Japanese locks use either Kwikset, or the longer IN 3 key blank, or if needed the thinner Dexter DE6. All of these blanks have the same keyway. Some locksmiths say that they won't re-key them and try to sell customers on new American locks.

Photograph five shows an Apo Japanese lockset. Note the hole in the knob to push a small nail into. The knob will pull off and the cylinder will be free to be removed from the rear of the knob. Pry off the white plastic cover at



5. APO Japanese lockset.



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